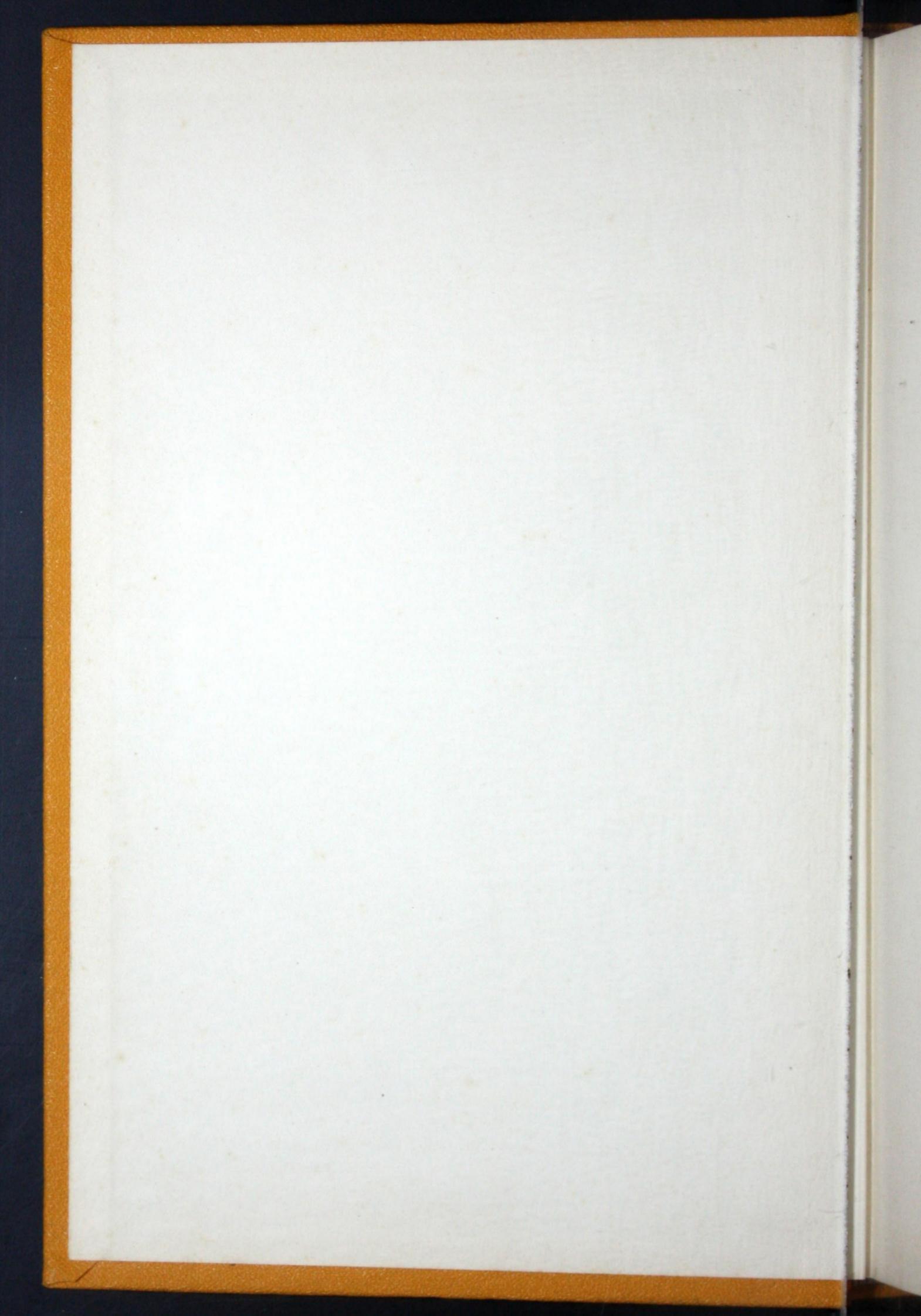


B. K. ELLIOTT COMPANY
PITTSBURGH · CLEVELAND
DETROIT



BHB



CATALOGUE AND PRICE LIST SEVENTH EDITION

of

B. K. ELLIOTT CO.

Manufacturers and Importers of

DRAWING MATERIALS

and

SURVEYING INSTRUMENTS

126 Sixth Street PITTSBURGH, PA.

Cable Address, "BLUEPRINT"

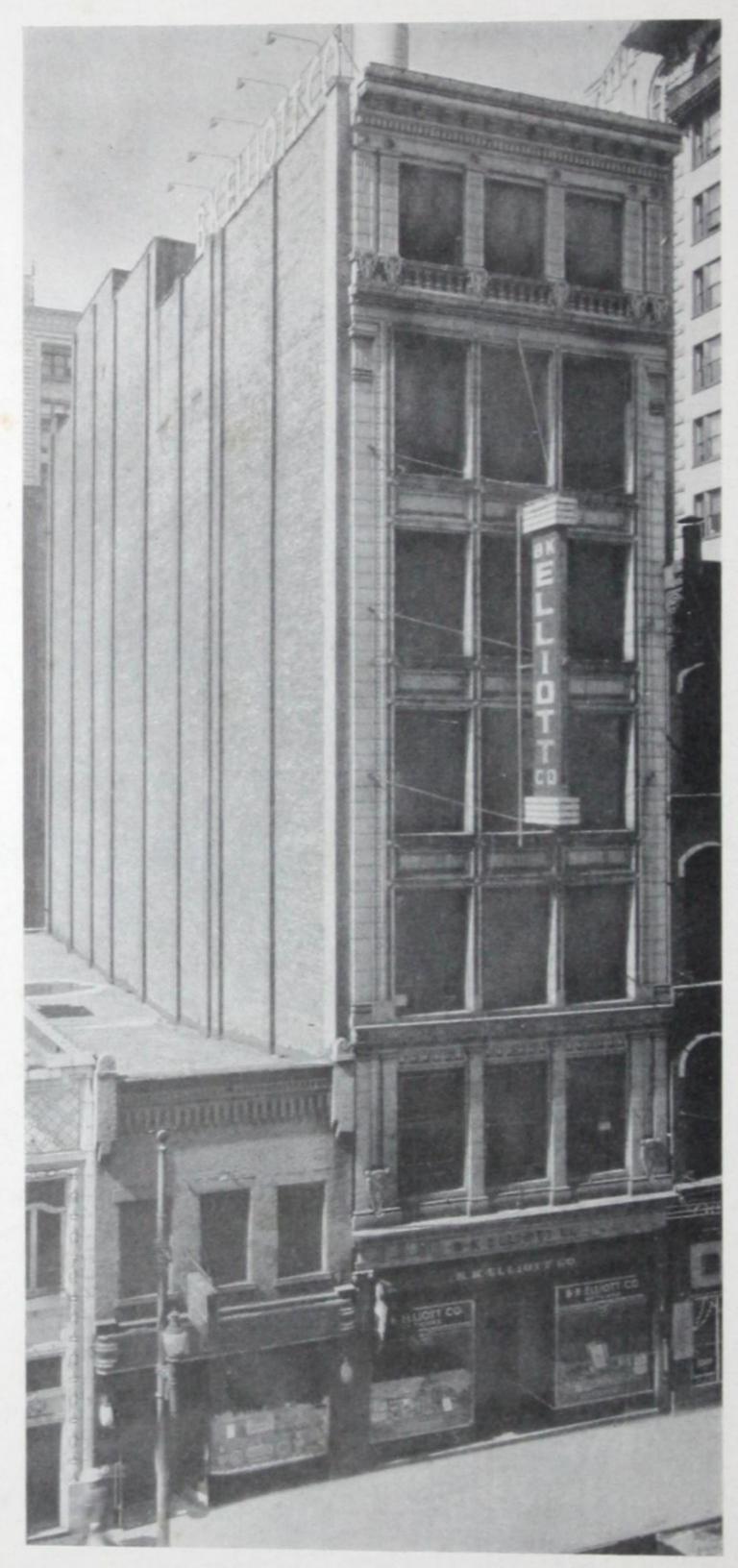
CLEVELAND BRANCH 733 Prospect Ave. DETROIT WAREHOUSE 21 Henry St.

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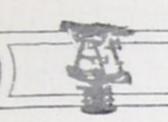




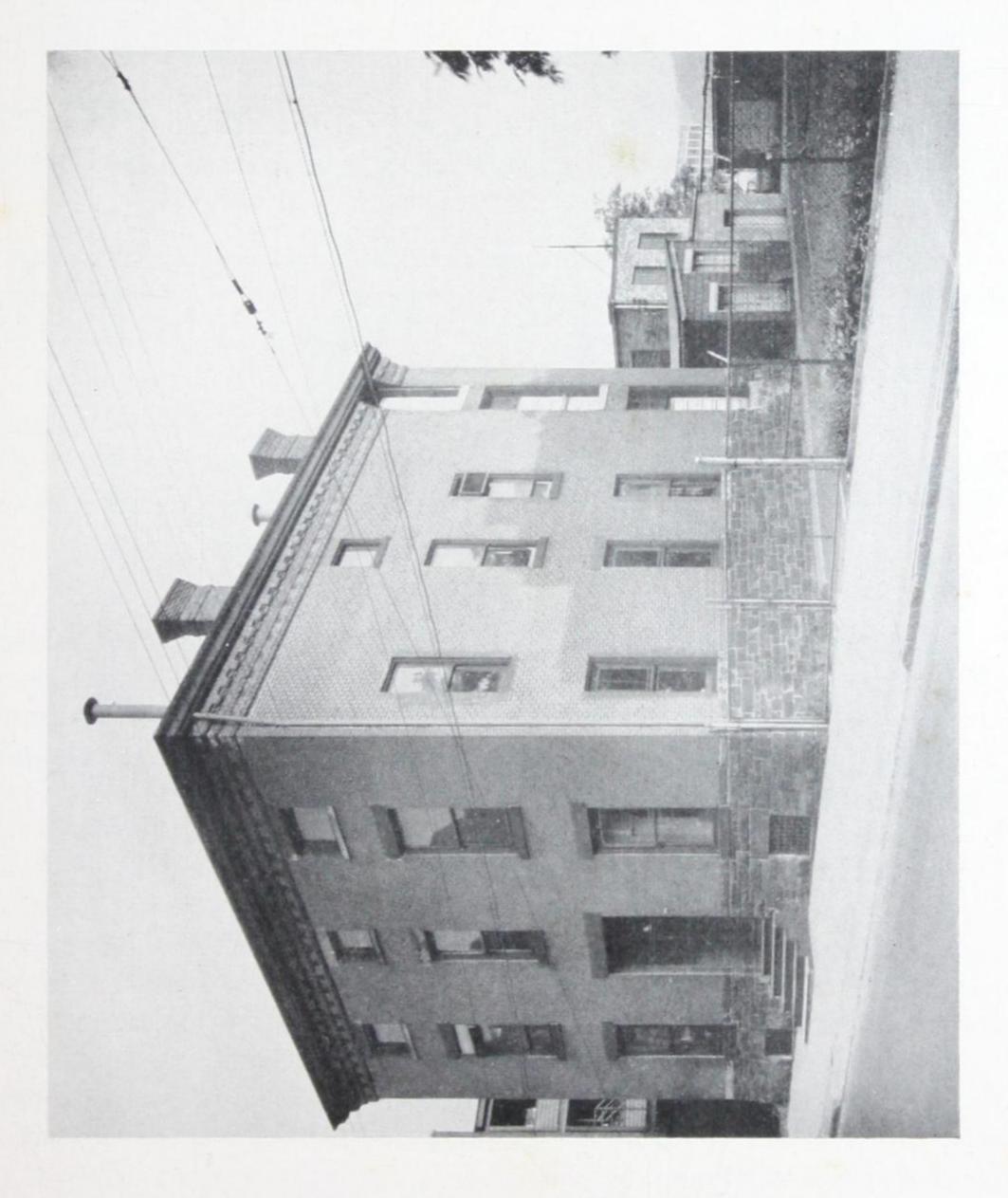


GENERAL OFFICE, SALES AND SHIPPING DEPT. 126 Sixth Street, Pittsburgh, Pa.

mono Page 2 Johnson



INSTRUMENT REPAIR DEPARTMENT



PITTSBURGH, PA.

Foreword

WE present this book to you, our customers and friends, with the hope that it will receive the same kind consideration given to our previous catalogs.

In preparing this catalog great care was exercised in the choice of the products illustrated and described; merchandise of known quality and value only is included.

Forty-eight years of experience in the selection of material in the mathematical field has made it possible for us to offer those materials that are of proven merit.

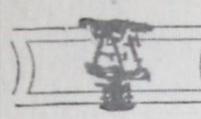
All materials listed herein are guaranteed by us to be exactly as represented. If the product when it reaches you is defective, of inferior quality, or proves unsatisfactory under reasonable usage and care, the article will be replaced or the purchase price gladly refunded.

Every article is described as completely as possible, and where possible, illustrated. The prices, listed in a separate price list, are effective at the time of issue. All stock orders will be invoiced at the price prevailing at the time they are shipped. A decline is put into effect just as promptly as an advance in price.

You may be interested to know that in addition to the Mathematical Department, to which this catalogue is devoted mainly, conveniently arranged so that all Blue Print Equipment and Supplies, Tracing Cloths and Papers, Drawing Instruments, Drafting Room Furniture, General Supplies, and Surveying and Engineering Instruments are grouped separately, other departments offer you their services, namely: the Blue Print Department in which we have the most modern equipment available to turn out the highest quality Blue Prints and Brown Prints; Lin-O Direct Line Prints; the Blue and Brown Print Paper and Cloth Coating Department; the Photocopy Department; the Photo-Litho Department; an Instrument Repair Factory for quick, accurate and economical repairing of transits and levels; an Artists' Materials Department; a Photographic Supply Department for amateurs and professionals; an Optical Department which offers you accurate grinding of lenses and correct fitting of eyeglasses and spectacles.

We hope you will have many occasions to refer to this catalog.

B. K. ELLIOTT COMPANY





THE BASIS ON WHICH MATERIALS IN THIS CATALOG ARE SUPPLIED

- Accounts—We welcome responsible parties to open an account with us, but require satisfactory commercial reference before doing so. Delays in shipments will occur in case initial order is not accompanied by satisfactory reference. No discourtesy is meant by this policy, but we take this measure of precaution, just as you would, under similar circumstances.
- Remittances—Remittances should be made by Bank Draft, payable to our order, or by Post Office or Express Money Order. If cash is forwarded by mail the letter should be registered. In case goods are ordered C. O. D. a remittance sufficient to cover transportation charges both ways should be enclosed. Remittance in full covering order is not only less expensive and more satisfactory but expedites a shipment.
- **Prices**—List prices are shown in a separate price list and are effective at the time of issue. All stock orders will be invoiced at the price prevailing at the time they are shipped. A decline is put into effect just as promptly as an advance.
- Guarantees—We guarantee our goods to be exactly as represented, and any article may be returned to us within 30 days from date of shipment if found unsatisfactory, and will be promptly replaced or money refunded.
 - Orders cannot be too explicit. To avoid delay and lessen the possibility of errors in filling orders, please observe the following directions:
- Description—Specify item number, name of article, length, width, size, pounds, and any other essential, descriptive information.
- Shipping Instructions—Always state whether you desire the goods shipped by parcel post, express or freight. If by freight, state route preferred. Shipments weighing seventy pounds or less may be sent by parcel post more advantageously and in most instances more cheaply than by freight.
- Parcel Post—Parcel post packages will be forwarded insured. The postage and the small insurance premium are ADDED TO THE INVOICE.
- Express—If desired, express shipments will be forwarded prepaid, and charges ADDED TO THE INVOICE.
- Freight—When no shipping directions are specified, goods will be forwarded according to our best judgment.

While we use the greatest care in making shipments, we are not responsible for goods damaged or lost in transit, and our responsibility ends when delivered to the carrier. In case of damaged or lost shipments, claim should be made to the carrier. We endeavor, however, to assist the purchaser every way in our power, in such instances.



DRAWING PAPER IN SHEETS AND ROLLS

WHATMAN'S DRAWING PAPERS

Explanation of Surfaces—C. P., "Cold Pressed," or ordinary surface; having a slight grain. H. P., "Hot Pressed," or smooth surface. R., "Rough," or very coarse surface; of large and open grain.

PER SHEET PER QUIRE

70061 Imperial, 22 x 30 inches, C.P., H.P., and R. 73 lbs. to ream.....

70062 Imperial, 22 x 30 inches, C.P., H.P., and R. 90 lbs. to ream.....

70063 Imperial, 22 x 30 inches, C.P., H.P., and R. 140 lbs. to ream......

70064 Double Elephant, 26 x 40 inches, C.P., H.P., and R. 133 lbs. to ream.....

SUPERFINE DRAWING PAPER

Sheets 22 x 30 inches

A pure white paper with medium smooth tooth for pencil and pen drawing.

70065 Superfine Drawing Paper. 24 Sheets

IMPERIAL WATERCOLOR PAPER

Sheets 22 x 30 inches

An exceptionally heavy, rough white paper, of high rag content, with pleasing surface that will help you put that certain softness into your watercolor work.

70066 PER SHEET PER DOZEN PER QUIRE

WATERCOLOR PAPERS

In Rolls 59 inches

A Superior grade white watercolor paper for large wash drawings and architectural renderings.

70067 Rough Surface..... PER YARD 10-YARD ROLL

WATERCOLOR BLOCKS

A hand made white rough paper of high rag content, 140 lbs. substance. In solid block form with fold back cover. 20 sheets bound on four sides. Sheets are readily separated by running a knife through bound edges.

7 x 10 9 x 12 10 x 14 Price...... 11 x 15 12 x 16 12 x 18 14 x 20 19 x 24

STRATHMORE CHARCOAL PAPER

Strathmore papers are noted for their fine charcoal surface, texture and beautiful tints.

70069 Size—White, 19 x 25 inches. Price per sheet

250 sheets

500 sheets

Sample book will be sent on request See Price List Inside Back Cover

PAGE 6 Junion



ILLUSTRATION BOARDS

STRATHMORE ILLUSTRATION BOARDS

These super quality boards are made in two surfaces—rough and regular surface In ordering state surface desired.

	Size *	PKG.	Wgr.	FINISH	Broken Pkg. Each	FULL PKG. PER 100
700701	20 x 30	10	Heavy	Regular		
700702	30 x 40	10	Heavy	Regular		
700703	22 x 30	25	Light	Regular		
700704	20 x 30	10	Heavy	High Finish		
700705	30 x 40	10	Heavy	High Finish		

LUXOR ILLUSTRATION BOARDS

REG. U. S. PAT. OFF.

These boards have been subjected to a very exhaustive test. Not only for pen and ink work but also for water color, wash, and pencil drawing, and in every instance the result has been most satisfactory.

Sı	ZE, INCHES	WEIGHT	EACH	12 Sheets	25 Sheets	50 Sheets	100 Sheets
700706	20 x 30	Light					
700707	20 x 30	Heavy					
700708	30 x 40	Light					
700709	30 x 40	Heavy					

WHATMAN'S WATERCOLOR BOARDS Made with Whatman's Paper

700710	22 x 30 inches, C.P., mounted with 72 lb. paper	Еасн	Dozen
	22 x 30 inches, R., mounted with 72 lb. paper		
	22 x 30 inches, H.P., mounted with 72 lb. paper		



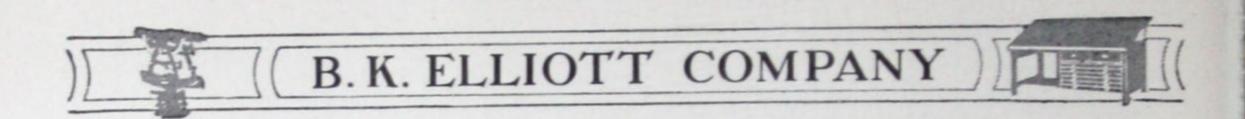
LUXOR

TRACING PAPER PADS

Finest quality, extra strong, clear transparent tracing paper, with good tooth for pencil or ink. In pads of 100 sheets, bound on one end. Cover for protection. Heavy back.

700713	Size 9 x 12 inches	EACH
700714	Size 14 x 17 inches	
700715	Size 19 x 24 inches	

See Price List Inside Back Cover



DRAWING PAPERS

SPIRAL SKETCHING PADS

Tablet form, spiral-bound fold-back cover. Good quality white, medium surface drawing paper for water color, ink and pencil.

LUXOR VISUALIZING TABLETS

REG. U. S. PAT. OFF.

A fine quality opaque tracing paper for visualizing and sketching in pads of 100 sheets with heavy back.

 700802
 Size 9 x 12 inches

 700803
 Size 11 x 14 inches

 700804
 Size 14 x 17 inches

 700805
 Size 19 x 24 inches

OXFORD BRISTOL BOARD

REG. U. S. PAT. OFF.

Sheets 22 x 30 inches

A very good grade of bristol board for pen and ink and all commercial art work.

12 25 50 100 Each Sheets Sheets Sheets

700806 Plate Finish, 2 ply. Price....
700807 Vellum Finish, 2 ply. Price....
700808 Plate Finish, 3 ply. Price....
700809 Vellum Finish, 3 ply. Price....

STRATHMORE DRAWING BOARD

Sheets 23 x 29 inches

700810 Medium Finish, 1 Ply. 700811 Medium Finish, 2 Ply. 700812 Medium Finish, 3 Ply. 700813 High Finish, 1 Ply. 700814 High Finish, 2 Ply. 700815 High Finish, 3 Ply.		PACKAGE 100 Sheets 50 Sheets 100 Sheets 50 Sheets 50 Sheets 50 Sheets 50 Sheets	PER PKG.
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STRATHMORE PATENT OFFICE BRISTOL BOARD

		SIZE, INCHES	SHEET	PER DOZEN	PER GROSS
700816	Strathmore, 2 ply, plain	10 x 15			
700817	Strathmore, 3 ply, plain	10 x 15			
700818	Strathmore, 2 ply, ruled	10 x 15			
700819	Strathmore, 3 ply, ruled	10 x 15			
	100				

"Reynolds" Patent Office Bristol Board

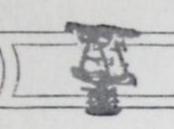
500000	10 15 1.	PER SHEET	PER DOZEN
700820	10 x 15, plain		
700821	10 x 15, ruled		

See Price List Inside Back Cover

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ELLIOTT PAPERS







DRAWING PAPERS







Orchid Detail Paper is a buff manila Detail Paper, possessing splendid erasing qualities and has good strength.

70091 Orchid Thin

Original rolls, about 140 lbs...

100 Yds. 50 Yds. 20 Yds.

70092 Orchid Medium
Original rolls, about 140 lbs.

30 inches wide.

36 inches wide

70094 Shamrock Green Detail Drawing Paper

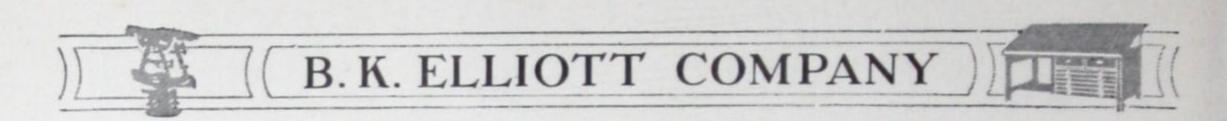
70095 Shamrock Green Detail Drawing Paper in Sheets

PER QUIRE PER REAM

Sample book will be sent on application

See Price List Inside Back Cover

PAGE 9 JUNION



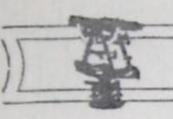
DRAWING PAPERS

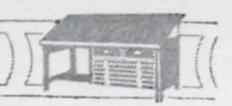
70101 "Victory" Detail Drawing Paper
An excellent medium priced buff paper for Schools, Colleges, Universities and Drafting Rooms. Per Lb.
Original rolls, 30 to 100 lbs
50 YDS. 10 YDS. PER YARD
30 inches wide
42 inches wide
70102 "Victory" Detail, in sheets PER QUIRE PER REAM
15 x 22 inches
22 x 30 inches
24 x 36 inches
70103 "Alton" Detail Drawing Paper
This rag content Buff paper will take ink and has unexcelled erasing qualities fo
a medium priced paper.
Original rolls, 30 to 40 lbs
50 Yds. 10 Yds. Per Yari
30 inches wide
42 inches wide
48 inches wide
70104 "Alton" Detail Drawing Paper, in sheets Per Quire Per Rean
11 x 15 inches
15 x 22 inches 22 x 30 inches
24 x 36 inches
70105 3X Pattern Paper
Excellent for covering drawing boards—heavy weight, hard finish—gives a good
smooth working surface. Can also be used for stencils and patterns.
Original rolls approximately 140 lbs. Per Lb
50 Vps 10 Vps
36 inches wide
48 inches wide
70106 "Kleenezy" Green Cover Paper
A Plastic coated, waterproof paper that will not soil or smudge. It is heavy enough to lie flat, yet flexible enough to bend without breaking. Its hard smooth surface will not score and drafting tape will not mar the surface. An aid to making clean cut tracings The green color helps eliminate eye fatigue. Excellent for covering drawing boards.
36 inches wide
42 inches wide

Sample book will be sent on application

See Price List Inside Back Cover

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DRAWING PAPERS





70113

70121

(Reduced facsimiles of our labels)

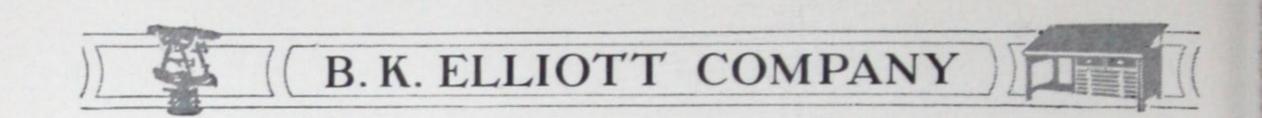
This is a good white paper at a low price, especially adapted for use in colleges and technical schools.

70111 "Ohio" Drawing Paper	Per Lb.
Original rolls, 30 to 40 lbs.	
30 inches wide	50 Yds. 10 Yds. Per Yd
70112 "Ohio" Drawing Paper, in sheets 11 x 15 inches. 15 x 22 inches. 18 x 24 inches. 22 x 30 inches. 24 x 36 inches.	
70113 "Avonmore" Drawing Paper (Heavy Weight) This paper is white and has a fine grained surface, chanical drawings. It is of domestic manufacture. Original rolls, 20 to 40 lbs	PER LB.
Original rolls, 30 to 40 lbs. 30 inches wide. 36 inches wide. 42 inches wide. 48 inches wide.	50 Yds. 10 Yds. Per Yd.
70114 "Avonmore" Drawing Paper, in sheets 22 x 30 inches. 24 x 36 inches. 27 x 40 inches.	
Sample hook will be cent on ann	liantian.

Sample book will be sent on application

See Price List Inside Back Cover

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"LENOX" WHITE DRAWING PAPERS

DEG U S PAT OFF

These papers are manufactured from the best 100% rag stock and we consider them the finest continuous roll drawing papers made. They will retain their pliability indefinitely and their erasing qualities are unsurpassed.

The smooth surface papers are suitable for pen and ink drawings, sketches, or work to be photographed and when mounted on muslin are in demand for use in making permanent mine maps.

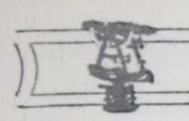
70121 "Lenox" Smooth Medium		PER LB.
Original rolls, 30 to 40 pounds		
		PER YD.
36 inches wide		
42 inches wide		
58 inches wide		
72 inches wide		
70122 "Lenox" Smooth Thick		PER LB.
Original rolls, 30 to 40 pounds		
		PER YD.
36 inches wide	10 105.	I Eli I D
42 inches wide		
58 inches wide		
72 inches wide		
MOUNTED ON MUSLIN		
70123 "Lenox" Smooth Medium, Mounted		
	10 Yps.	PER YD.
36 inches wide		
42 inches wide		
58 inches wide		
70124 "Lenox" Smooth Thick, Mounted		
	10 YDS	PER YD.
36 inches wide		
42 inches wide		
58 inches wide		
72 inches wide		
Price will be quoted on anni:		

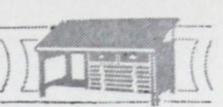
Price will be quoted on application for sheets of above papers of any size, mounted on muslin.

Sample book will be sent on application

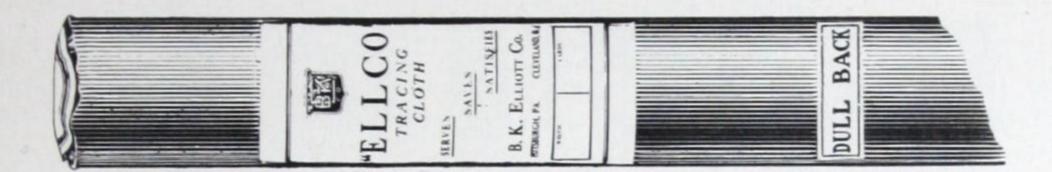
See Price List Inside Back Cover

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TRACING CLOTHS



"ELLCO" TRACING CLOTH

70131 "Ellco" Tracing Cloth, one side glazed, the other side dull.

PER ROLL



"IMPERIAL" TRACING CLOTH

54 inches wide, 20-yard rolls.....

"ARKWRIGHT" TRACING CLOTH

"PRUDENCE" TRACING CLOTH

70134 "Prudence" Tracing Cloth, one side glazed, other side dull.

PER ROLL

42 inches wide, 20-yard rolls.....

See Price List Inside Back Cover

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PENCIL TRACING CLOTHS



"ELLCO" PENCIL TRACING CLOTH

REG. U. S. PAT. OFF.

"ARKWRIGHT" PENCIL TRACING CLOTH

70142 "Arkwright" Pencil Cloth (Bluetint), one side dull, other side smooth (not glazed)

24 inches wide, 20-yard rolls.
30 inches wide, 20-yard rolls.
36 inches wide, 20-yard rolls.
42 inches wide, 20-yard rolls.



"IMPERIAL" PENCIL TRACING CLOTH

70143 "Imperial" Pencil Cloth, one side dull, other side smooth (not glazed) takes ink and pencil readily

30 inches wide, 20-yard rolls.

36 inches wide, 20-yard rolls.

42 inches wide, 20-yard rolls.

ARK - A - TEX

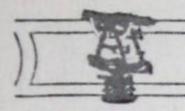
MOISTUREPROOF PENCIL TRACING CLOTH

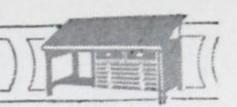
Keen, sharp, smoother pencil lines — the pencil glides across the cloth. Eye-pleasing transparency. Pencil and pen lines vanish when erased — no change in the surface of the cloth. Available in white or blue. Takes ink and pencil. Pencil line range 6H and up.

30 inches wide, 20 yard rolls.
36 inches wide, 20 yard rolls.
42 inches wide, 20 yard rolls.

See Price List Inside Back Cover

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PRINTED SHEET FORMS

STANDARD BORDER OR TRIM LINES

Specify by Number Weight of Line Desired for Border and Trim Lines

STANDARD SIZES OF TYPE

ALMOST ANY STYLE OF TYPE DESIRED CAN BE SUPPLIED

- 1. B. K. ELLIOTT CO.
- 2. B. K. ELLIOTT CO.
- 3. B. K. ELLIOTT CO.
- 4. B. K. ELLIOTT CO.
- 5. B. K. ELLIOTT CO.
- 6. B. K. ELLIOTT CO.
- B. K. ELLIOTT CO.
- B. K. ELLIOTT CO.
- B. K. ELLIOTT CO.

NOTE

As all sheets are printed to your specifications, we ask you to furnish either a sketch or sample of the title block. When blue prints are furnished as a sample, mark dimensions plainly to avoid errors.

When reverse printing is wanted, a plate is necessary.

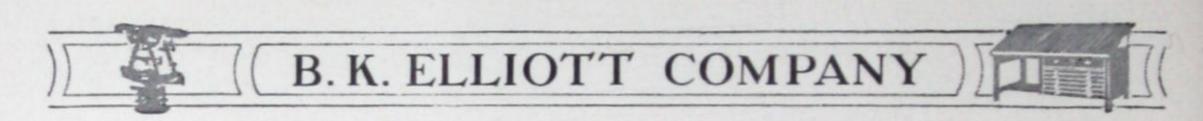
When possible, keep the outside (over all) dimensions of the sheet one way at least, so it will cut from standard widths of cloth and paper 30-inch, 36-inch, 42-inch widths.

Long experience in this specialized work enables us to print the largest or smallest sheets perfectly. A special opaque, black, hard drying ink is used that will not smear or rub off even when tracings are constantly handled.

Let us quote on your requirements

See Price List Inside Back Cover

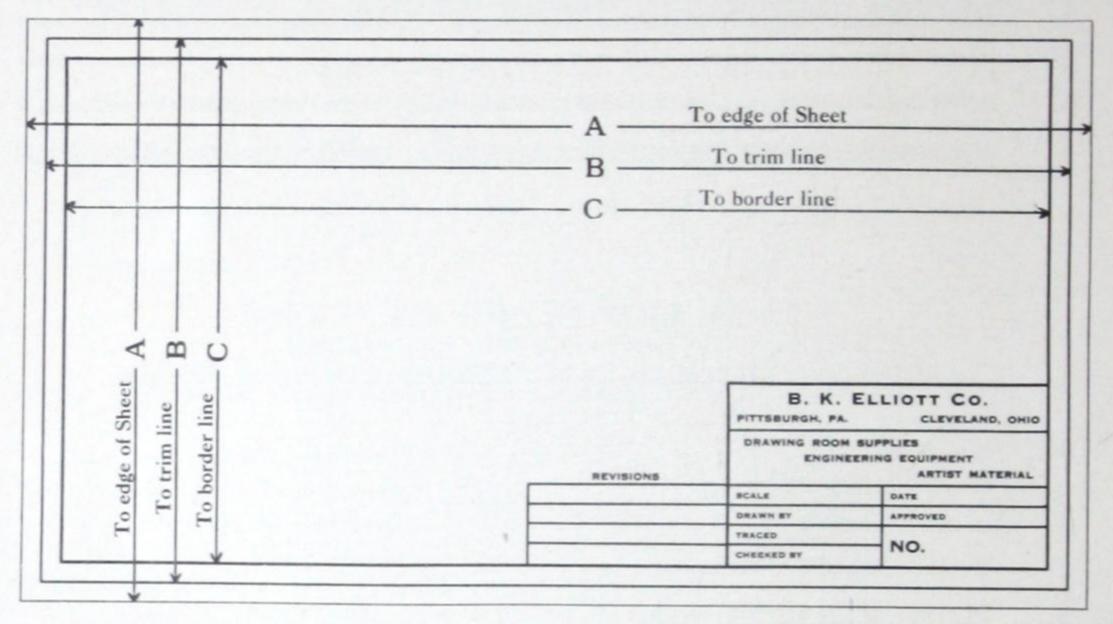
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PRINTED SHEET FORMS

TRACING CLOTH—PENCIL TRACING CLOTH TRACING PAPER AND DRAWING PAPER

Cut Costs-Improve Appearance-Avoid Waste



Printed Sheet Forms are coming into general use more and more every day. They cut costs . . . improve appearance . . . and avoid waste.

If you figure costs—then printed sheets cost much less than ruling border lines and title block and lettering the title block by hand.

If you figure appearance—then printed sheets present uniform ruling and uniform lettering.

If you figure waste—then printed sheets save material because the sheets are exactly the size needed—no extra inches wasted as often occurs when individual sheets are cut by hand from a roll.

It is economical to use printed sheets-always.

When ordering give the following information:

Number of sheets wanted.

Kind of cloth or paper wanted (use Elliott's catalog number as reference when possible)

Give dimensions of over all sheet "A" in inches

Give dimensions to trim lines "B" in inches

Give dimensions to border lines "C" in inches

Give thickness of border lines by No. See Page 15

Give thickness of trim lines by No. See Page 15

Select size of type desired for title block by No. See Page 15

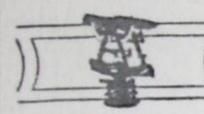
State which side of cloth to be printed, whether dull or glazed side.

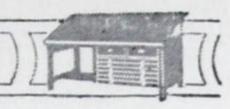
Note. An allowance of \(^3\)/s-inch must be made from outside lines to edge of sheet when figuring on sheets up to 18 x 24 inches. On sheet of larger size \(^1\)/2 inch must be allowed.

70161 Tracing Cloth Ink, Black.....

1/4-LB. TUBES LB. CANS

See Price List Inside Back Cover







70171

PROTECT-O-LINE

REG. U.S. PAT. OFF.

Smudge-Proof . . . Heat-Proof . . . Moisture-Proof PENCIL LINE LACQUER

No more worries, now, over pencil lines on cloth or paper rubbing off, smearing or offsetting. Protect-O-Line has a pleasant odor . . . is colorless and transparent . . . safe to use . . . easy to apply . . . dries flat, smooth and streakless in less than 60 seconds . . . will not crack, change color or deteriorate with age . . . and is dull in finish, no glossy or shiny surface. Corrections and additions to drawings protected with Protect-O-Line can be made quickly.

70171 Protect-O-Line Pencil Line PINT QUART GALLON Lacquer, in cans.....

TRACING CLOTH CLEANER

Removes pencil, crayon and dirt from Tracing Cloth, but does not affect Water-proof Ink lines. Will not injure the Cloth.

PINT QUART GALLON

70172 Tracing Cloth Cleaner....

ERASOL INK ERADICATOR

The original Paste Ink Remover for use on Tracing Cloth.

"Erasol" dissolves the binder of the ink on the cloth, picks up the carbon, leaving the surface clean, without injuring the cloth.

DIRECTIONS are printed on each box.

EACH

70173 "Erasol" Ink Eradicator, in metal box.....

"ELLCO" TRANSPARENTIZING SOLUTION

4 "Ellco" Transparentizing Solution....

70175 "Ellco" Transparentizing Solution....

PER QT.

70176 "Ellco" Transparentizing Solution....

This solution applied to soiled or old tracings restores their transparency. If applied to brown negatives or drawings on white paper, it greatly increases their transparency.



70174

POUNCE FOR TRACING CLOTH

70177 Pounce for Tracing Cloth

EACH

In shakers...

When tracing cloth or vellum paper will not take the ink readily, apply a small quantity of the Pounce and distribute over surface of the cloth by rubbing with a piece of chamois, waste or similar material, and then remove same before applying the ink.

See Price List Inside Back Cover

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70177





TRACING PAPERS





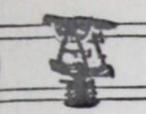
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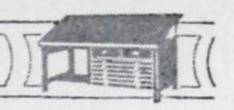
70181 Teutonia. Canary color, for tracing details. Very thin, transparent and strong.
Per Roll
42 inches wide, 100-vard rolls
48 inches wide, 100-yard rolls.
42 inches wide, 50-vard rolls
48 inches wide, 50-yard rolls
70182 Unglazed Natural. A clear white paper possessing a fine tooth highly desirable
for pencil drawings. It is tough and transparent, and owing to its white color pencil marks show up distinctly. Excellent Blue Prints can be made.
PER POLI
42 inches wide, 20-vard rolls
42 inches wide, 50-vard rolls
OF INCHES WILLE, 20-VALUETORS
57 inches wide, 50-yard rolls
70183 Elliott Bond. Here is a very strong, white, smooth surfaced, 100% rag tracing paper. It has fine erasing qualities and takes pencil or ink equally well. Recommended for details.
PER ROLL
30 inches wide, 20-vard rolls
30 inches wide, 50-vard rolls
12 menes wide, 20-vard rolls
42 inches wide, 50-yard rolls
70184 Elliott Thin Bond. This is a very thin, white, transparent, 100% rag tracing
paper possessing a fine tooth for either pencil or ink. Erasing qualities good. Makes
excellent blue prints. Erasing qualities good. Makes
D D
30 inches wide, 25-yard rolls.
of menes wide, ou-vard rolls
12 menes wide, 25-vard rolls.
42 inches wide, 50 yard rolls

Sample book will be sent on application

See Price List Inside Back Cover

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TRACING PAPERS

100% RAG STOCK

The four tracing papers described on this page are all—100% rag—their only difference being in name and weight . . . "Capitol" is thin . . . "Federal" is medium . . . "National" is medium heavy . . . and "Colonial" is heavy. For over a quarter of a century, their qualities have never varied. They are tough (no other paper on the market is stronger, being second only to tracing cloth) . . . pure white . . . transparent will stand a lot of handling . . . possess a smooth working surface . . . have splendid erasing qualities . . . and will not deteriorate with age.

Capitol. White, thin weight, very tough and transparent. An excellent paper

for architectural sketching and details.	PER ROLL
30 inches wide, 20-yard rolls. 36 inches wide, 20-yard rolls. 42 inches wide, 20-yard rolls. 30 inches wide, 50-yard rolls. 36 inches wide, 50-yard rolls. 42 inches wide, 50-yard rolls.	
70192 Federal. White, medium weight, very strong and transparent. Suitable for structural drawings and architectural details and other	
considerably handled.	PER ROLL
30 inches wide, 20-yard rolls. 36 inches wide, 20-yard rolls. 42 inches wide, 20-yard rolls. 30 inches wide, 50-yard rolls. 36 inches wide, 50-yard rolls. 42 inches wide, 50-yard rolls.	
70193. National. White, medium heavy weight, very strong. Especially	suitable for
drawings considerably handled. Used extensively by structural engine	eers. Per Roll
30 inches wide, 20-yard rolls. 36 inches wide, 20-yard rolls. 42 inches wide, 20-yard rolls. 30 inches wide, 50-yard rolls. 36 inches wide, 50-yard rolls. 42 inches wide, 50-yard rolls.	
70194 Colonial. White, heavy weight, very tough and transparent exdetailing. Makes fine blue prints.	xcellent for
	PER ROLL
30 inches wide, 20 yard rolls 36 inches wide, 20 yard rolls 42 inches wide, 20 yard rolls 30 inches wide, 50 yard rolls 36 inches wide, 50 yard rolls 42 inches wide, 50 yard rolls	

Sample book will be sent on application

See Price List Inside Back Cover

Some Page 19 Johnson





TRACING PAPERS

70201 Standard Medium. A white tracing paper exceptionally suited for sketching and drawing. From drawings made on this paper, fine blue prints can be made quite readily.

Per Roll

36 inches wide, 20-yard rolls.....

36 inches wide, 50-yard rolls......

70202 Othello, Medium. A white, transparent glazed surface tracing paper. Fine for sketching and making blue prints.

42 inches wide, 20-yard rolls.....

70203 Onion Skin. A thin, white, very transparent, glazed surface tracing paper.

Per Roll

70204 "Ajax". A remarkably tough, highly transparent, fine pencil surface paper with good erasing qualities. Will not change color nor become opaque. Takes pencil, ink and water color.

PER ROLL

36 inches wide, 20 yard rolls.....

42 inches wide, 20 yard rolls.....



70205 "IXL". An exceedingly tough paper with a distinctive pencil surface and possessing splendid erasing qualities. Affected little by humidity changes. Produces clearest and sharpest prints.

26 inches wide, 20 yard rolls.

42 inches wide, 20 yard rolls

42 inches wide, 20 yard rolls
36 inches wide, 50 yard rolls
42 inches wide, 50 yard rolls

Sample book will be sent on application

See Price List Inside Back Cover

Survey PAGE 20 Junior





TRACING PAPERS



ELLCO-VEL

DEC II & DAT OFF

TRACING PAPERS

THE TRACING PAPERS ARCHITECTS, ENGINEERS AND DRAFTSMEN SWEAR BY NOT AT.

10 DISTINCTIVE ADVANTAGES OFFERED

- 1. Does Not Become Brittle Or Opaque.
- 2. Less Affected By Humidity Changes.
- 3. Unique Working Surface For Pencil.
- 4. Not Subject To Surface Cracks.
- 5. Erases Without Ghosts.
- 6. Fine Transparency.
- 7. Printing Speed Like Tracing Cloth.
- 8. Make Perfect Blue Prints.
- 9. Will Not Change Color With Age.
- 10. Takes Ink, Crayon and Water Color.

70211 Ellco-Vel (Thin)	PER ROLL
30 inches wide, 20-yard rolls	
36 inches wide, 20-yard rolls	
42 inches wide, 20-yard rolls	
70212 Ellco-Vel	PER ROLL
30 inches wide, 20-yard rolls	
36 inches wide, 20-yard rolls	
42 inches wide, 20-yard rolls	
70213 Ellco-Vel (Heavy)	PER ROLL
30 inches wide, 20-yard rolls	
36 inches wide, 20-yard rolls	
42 inches wide, 20-yard rolls	

Sample book will be sent on application

See Price List Inside Back Cover

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TRACING PAPERS



Monarch Vellums are made from the best 100% rag stock. They stay white permanently, are moderately transparent and odorless. Possess excellent working surfaces with unexcelled erasing qualities. They will not discolor or lose their strength or flexibility because of age. Can be used with either pencil or ink.

70222 Monarch Vellum. Same qualities as No. 70221 but lighter in weight and more transparent.

Per Roll

																	PER	Roi	1
30	inches	wide,	20-yard	rolls.	 ٠.		 								 				
36	inches	wide,	20-yard	rolls.	 	 	 					 							
42	inches	wide,	20-yard	rolls.	 	 	 					 							

70223 Ellco Vellum Medium. An odorless white, medium weight, 100% rag stock paper. Possesses unusually fine erasing qualities combined with a high degree of transparency and good strength. A fine tooth surface for pencil or ink.

for pencil or ink.		
20 inches mile 20 1 11	PER	ROLL
30 inches wide, 20-yard rolls		
36 inches wide, 20-yard rolls		
42 inches wide, 20-yard rolls		

70224 Ellco Vellum Thin. Same qualities as 70223 but lighter in weight and more transparent.

PER ROLL

30	inches	wide,	20-yard	rolls.							
36	inches	wide,	20-yard	rolls.							
42	inches	wide.	20-vard	rolls	-						Ī

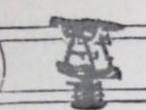


70225 Mercury Vellum. An excellent substitute for tracing cloth. Made entirely of the best 100% new white rag stock, transparentized with colorless, inert, synthetic resins. It will retain its original white color. It is bone dry giving it an excellent working surface for pencil, ink or water color, with very good erasing qualities.

30 inches wide	20 YDS.	50 YDS.
30 inches wide		
36 inches wide		

Sample book will be sent on application

See Price List Inside Back Cover





ELLIOTT'S COATED PRODUCTS

DIRECT PRINTING PAPERS BLUE PRINT PAPERS AND CLOTHS BROWN PRINT PAPERS AND CLOTHS REPRODUCTION TRACING CLOTH

Within many miles radius of Pittsburgh, Detroit and Cleveland the name—B. K. Elliott Company—is synonymous with quality products, particularly blue print papers and cloths and brown print papers and cloths.

This reputation, as regards coated products, was built through using the best raw stock and pure chemicals and in applying our solutions in the most scientific manner immediately after receipt of each order.

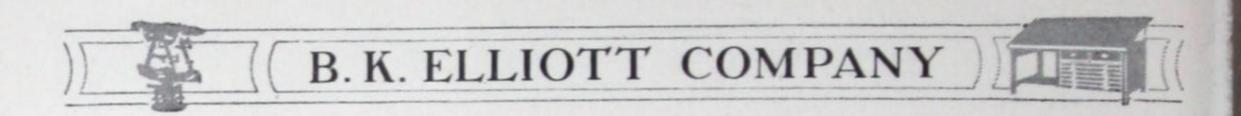
Our papers possess the better printing properties, give better background and sharpness of line and have superior strength.

During the past forty-eight years, in our Sensitizing Department, we have concentrated on producing sensitized papers and cloths of long "shelf-life", the emulsions of which were adjusted to suit printing conditions of each customer, consequently these coated products are in great demand in the territory we cover.

Our laboratory constantly supervises the preparing of our solutions, as well as the application to the papers and cloths, as ordered by our customers.

We are also constantly searching for new methods in laboratory practice, as well as in the manufacture of coated products.

If you are not a user of Elliott's sensitized products, we invite a trial.



BLUE PRINT SENSITIZING SOLUTIONS

Our blue print papers are offered in two types of coatings—and five printing speeds in each type. The canary yellow coatings are available in Speeds #1, #2, #2½, #3 and #4. The Pre-Blue coatings are available in Speeds #12, #14, #16, #18, and #20. Generally speaking, the critical speeds of both types of solutions are the same, i.e., #1 and #12, #2 and #14, #2½ and #16, #3 and #18, and #4 and #20 being in the same speed classification.

7023

7023

702

702

702

70:

Actually, the pre-blue solutions have somewhat wider range, however, so that the pre-blue coating would overlap the range of its comparable yellow solution. For example, #16 would cover part of #2 and #3 yellow coatings, while having the same critical speed as #2½. In the fast coatings, #20 will run beyond the fastest speed of #4, while its increased range will overlap part of the #3 normal range.

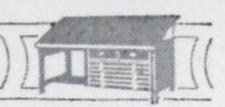
The pre-blue papers require water bath before the application of potash and a slightly stronger potash bath than the yellow solutions.

Fine contrast with rich blues and clear whites are characteristic of all Elliott Blue Print Papers, regardless of whether the yellow or the pre-blue coatings are used.

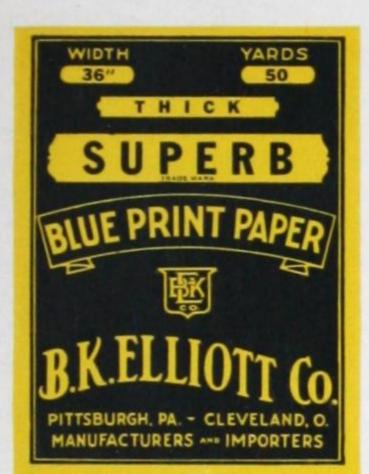
When ordering blue print papers, be sure to specify by number the printing speed desired.

CANARY YELLOW COATING	PRE-BLUE COATING
#1 (also called Rapid)	#12
#2 (also called Wunminit)	#14
#2½ (also called Special Wunminit)	#16
#3 (also called Extra Rapid)	#18
#4 also called Extra Electric Rapid)	#20





BLUE PRINT PAPERS



"SUPERB"

Superb Blue Print Paper is made of selected white 100% rag stock, hard sized and, when coated with any one of our five (5) different printing speeds in either canary yellow or pre-blue coating, produces superior blue prints. Prints made on this paper have a clear white line and a rich blue background. Of course, slower printing solutions produce better blues on any paper than fast printing solutions. The Superb papers are recommended for their unusual strength and toughness and for prints that are intended for use as records which receive an unusual amount of rough handling. Superb Blue Print Paper is made in three weights—Thin, Thick and Extra Thick.

70251 "Superb" Thin, 16 lbs.	WIDTH	Inches	30	36	42	54
10-yard rolls						
70252 "Superb" Thick, 24 lbs.						
10-yard rolls						
70253 "Superb" Extra Thick, 30 lbs	S.					
10-yard rolls						



"FULTON"

REG. U. S. PAT. OFF

"Fulton" Blue Print Paper is made of 50% selected white rag stock and is produced to meet the demand for a popular blue print paper in shop and field. It is made in three (3) weights—Thin, Medium and Thick. It is prepared by us with any one of our five (5) printing speeds in either canary yellow or pre-blue coating which gives our customers choices between slow and very fast printing. This paper possesses fine strength and excellent printing properties.

WIDTH INCHES	24	27	30	36	42	48	54
70254 "Fulton" Thin, 17 lbs.							
10-yard rolls							
50-yard rolls							
70255 "Fulton" Medium, 201/2 lb							
10-yard rolls							
50-yard rolls							
70256 "Fulton" Thick, 24 lbs.							
10-yard rolls							
50-vard rolls							

Greater length rolls or sheets cut to any size can be furnished

See Price List Inside Back Cover

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7027

7027



BLUE PRINT PAPERS

"ECONOMY"

Economy Blue Print Paper is made of 25% white Rag stock and was selected to meet a demand for a first class blue print paper at a low price and yet it is one which will stand a great deal of handling without showing wear. While this paper does not have the strength and durability of the Superb or Fulton papers, at the same time, when prepared with any one of our five printing speeds in either canary yellow or pre-blue coating will produce fine blue prints.

	WIDTH	INCHES	30	36	42
70261 Economy Medium, 201/2 lbs.					
10-yard rolls					
50-yard rolls					
70262 Economy Thick, 24 lbs.					
10-yard rolls					
50-yard rolls					



BLUE PRINT CLOTHS

"VICTOR"

REG. U. S. PAT. OFF.

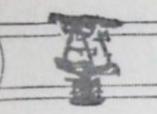
Victor Blue Print Cloths are produced in two weights—Thin and Thick. This cloth is carefully woven and, in the making, particular care is given to proper sizing so that when it is sensitized with blue print solutions, best results may be secured. We particularly recommend our Speed 1 (Rapid) solution for best results when applied to our Victor Blue Print Cloth.

70263 "Victor" Thin	WIDTH	INCHES	30	36	42	54
10-yard rolls						
70264 "Victor" Thick						
10-yard rolls						
Greater langth rolls of						

Greater length rolls or sheets cut to any size can be furnished

See Price List Inside Back Cover

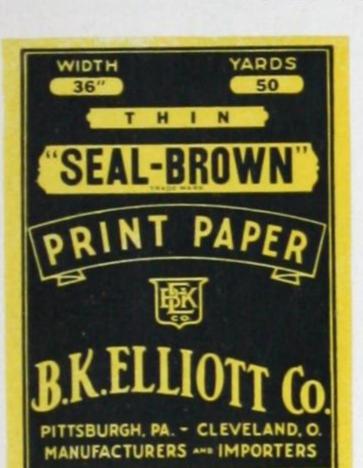
Some Page 26 Junion





SENSITIZED "SEAL-BROWN" PRINT PAPERS AND CLOTHS

FOR POSITIVE AND NEGATIVE PRINTS



"SEAL-BROWN" PRINT PAPERS

Best known, where Brown Print Papers are used, are Elliott's "Seal-Brown" Print Papers—recognized as the finest available for making brown prints or negatives. Negatives made on Elliott's Regular "Seal-Brown" Print Papers or Transparentized for Negatives "Seal-Brown" Print Papers are uniformly good . . . never any pin-holes . . . with a brown that is absolutely opaque. Blue Line or Brown Line Prints made from negatives on "Seal-Brown" Print Paper are the finest produced, provided, also Elliott's Blue or "Seal-Brown" Print Papers are used to make them.

70271 "Seal-Brown" Print Paper—Thick (For Positives) 24 lbs.

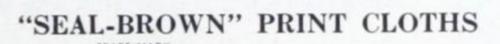
Width, Inches 30 36 42 54 10-yard rolls 50-yard rolls

70272 "Seal-Brown" Print Paper-Thin (For Positives and Negatives) 14 lbs.

WIDTH, INCHES 30 36 42 54

70273 "Seal-Brown" Print Paper (Transparentized for Negatives) 14 lbs.

Width, Inches 30 36 42 54





Elliott's "Seal-Brown" Print Cloths possess the same high printing qualities as found in the "Seal-Brown" Print Papers. Frequently, "Seal-Brown" Print Cloth is used for permanent record brown line prints. This cloth is woven with extreme care, particular attention being given to the sizing, so that when sensitized, the finest "Seal-Brown" Prints will be produced.

70274 "Seal-Brown" Print Cloth—Thick (For Positives)

Width, Inches 30 36 42 54 10-yard rolls 50-yard rolls

70275 "Seal-Brown" Print Cloth—Thin (For Positives and Negatives)

Width, Inches 30 36 42

See information for printing, washing, developing and fixing on page 28.

Samples of "Seal-Brown" Print Paper and Cloth will be sent upon request.

See Price List Inside Back Cover

mone Page 27 Johnson

SENSITIZED "SEAL-BROWN" PRINT PAPERS AND CLOTHS

This paper is the most satisfactory on the market for producing brown prints or negatives. Positive prints (either blue line or brown line on white background) are easily made from negatives made on "Seal-Brown" Print Paper.

> It is easily manipulated It is a good keeping paper It makes Seal-Brown Negatives It makes Seal-Brown Line Positives It prints rapidly It preserves original tracing.

DIRECTIONS FOR USE

When desiring negatives to be used in producing positives, the tracing should be placed with the ink side next to the emulsion side of the paper. This will make the print on the negative upsidedown, which makes for sharper and clearer positives. Our No. 70272 "Seal Brown" Print Paper Thin, or No. 70273 "Seal Brown" Print Paper Transparentized are best to use for negatives.

EXPOSURE

The exposure is sufficient (if clean, transparent tracings are used) when the protruding end of the Seal Brown Print Paper assumes a light brown color. A few preliminary tests by an inexperienced person will soon teach him the correct timing of exposure to either sun or electric lights.

DEVELOPMENT

After the print has been exposed, bathe it in clear, clean water for 5 minutes, first washing it, printed side up, to clear off loose chemicals, then turn printed side down during balance of bathing. When the water bath is finished, the wet print should be fixed by bathing it in a fixing solution made by dissolving 1/2 cup (4 oz.) hypo crystals to 3 gallon (1 pail) of water (1% solution). The water should be at room temperature of 70 to 80 degrees or slightly warmer. The print should be kept in the fixing solution for about 1/2 minute and then bathed again for 3 minutes in clear, clean water and then hung up to dry. A properly exposed print in the first water bath assumes a reddish-brown color and the lines are perfectly white. On drying, the background turns to an intense brown of great opacity.

POSITIVES

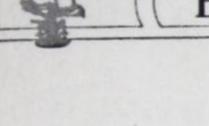
To produce blue line prints with a white background, use the negative produced by the process mentioned above as a tracing over our Fulton or Superb blue print paper or Victor blue print cloth, which should be printed, washed, developed and washed in the usual manner for making blue prints. To produce brown line prints with a white background, use the negative as tracing over either our "Seal Brown" print paper or "Seal Brown" Print Cloth and proceed in the same way as in making blue line prints but exposing the paper or cloth from 2 to 4 times as long as required in making the negative. The development of these brown line prints is the same as described above for the negative and great care should be taken to see that they are well bathed before and after the fixing solution is applied.

As all sensitized papers are sensitive to heat, moisture and light, proper care should be exercised at all times in keeping your stock on hand. Where more than a few rolls are stocked, the rolls should be stood on end and not stacked in layers as this will eliminate extra loading on the lower layers, which results as a rule in rapid deterioration of sensi-

tized papers.

USE OF THIN "SEAL-BROWN" PRINT CLOTH FOR REPLACING TRACINGS

Positive prints made from our No. 70275 Thin "Seal-Brown" Cloth are being used extensively when reproductions of tracings are required. A more perfect reproduced tracing is produced by our D T process. See pages 33 and 34.



LIN-0

Reg. U. S. Pat. Off.

Lin O Blu Stin O Blu Stin O Blu Stin O Blu Stin O Blu



PAPERS AND CLOTH

POSITIVE WHITE PRINTS
BRILLIANT COLORS
EXCELLENT CONTRAST
WIDE PRINTING RANGE
TRUE TO SCALE COPIES

LIN-O prints can be made on any type of ammonia developing equipment

LIN-O PAPERS AND CLOTH

REG. U. S. PAT. OFF

POSITIVE, DRY DEVELOPING PROCESS

Elliotts LIN-O Direct Printing Papers and Cloth were developed to offer engineers and draftsmen an improved, high quality material for making positive-reading reproductions of engineering and architectural plans and drawings, specifications, photographic material and other originals.

It differs radically from the process of making Blue Prints, Brown Prints, Blue Line Prints and Brown Line Prints. Several operations are eliminated, notably, washing with water, fixing with chemicals, then washing with water and finally drying the prints. This moisture and heat causes expansion and contraction of the prints which results in a less accurate print.

With the LIN-O Direct Printing Process, it is just a matter of exposure and dry developing, using ammonia or any other alkaline vapor. For that reason, LIN-O Prints are truer to scale and less likely to curl.

The LIN-O Direct Printing Process is a method of making positive prints direct from positive originals or negative prints from negative originals of anything drawn, printed, typed or photographed on transparent material.

There is no intermediate step necessary—just exposure and dry development—to make LIN-O prints. Positive originals produce clear, easy-to-read prints with lines in anyone of 4 colors—blue, red, black or sepia—on a white background. Negative originals, of course, will produce negative prints in these same 4 colors.

It is possible, also, to make LIN-O Prints from opaque subjects by having a transparent film made of your original subject. Any photographer, by following the usual photographic steps, can do this for you or we can furnish this service if you desire.

Another feature of Elliott's LIN-O Direct Printing Process is that no special equipment is needed. LIN-O Prints can be made on any type arc light, quartz or mercury tube printing equipment and developed in any ammonia developing equipment.

LIN-O PAPERS AND CLOTH

REG. U. S. PAT. OFF.

LIN-O PAPERS FOR GENERAL USE

- LIN-O-BLU—produces blue lines on white background.
- LIN-O-RED produces red lines on white background.
- LIN-O-BLACK—produces black lines on white background.

These papers are for general reproduction work, engineering and architectural drawings, specifications, typed and printed material, etc.

Available in rolls or sheets of any size, and in three weights of paper stock. Thin 17# basis—Medium 20½# basis—Thick 24# basis.

LIN-O PAPER-TRANSPARENTIZED-FOR INTERMEDIATE USE

• LIN-O-VEL-produces sepia lines on white backregound.

REG. U. S. PAT. OFF.

This is a thin, 14# basis stock 100% rag, transparentized paper with exceptional strength so that it can be used as a substitute for originals in subsequent print production. By using extra LIN-O-VEL prints much greater production can be gotten. LIN-O-VEL prints can be sent to various plants and sub-contractors for making their work prints. Furthermore, these prints save time when design changes are necessary—lines to be corrected can be removed with SEPIA-LINE CORRECTOR and the new design drawn in with pencil or pen.

7029B1	Lin-O-Vel Transparentized Paper, Thin 14#	50 Yds.	10 Yds.
	30 inches wide		
	36 inches wide		
	42 inches wide		
	Sheets In Sizes Desired		

LIN-O CLOTH FOR SPECIAL USE

• LIN-O-BLU - produces blue lines on white background.

REG. U. S. PAT. OFF.

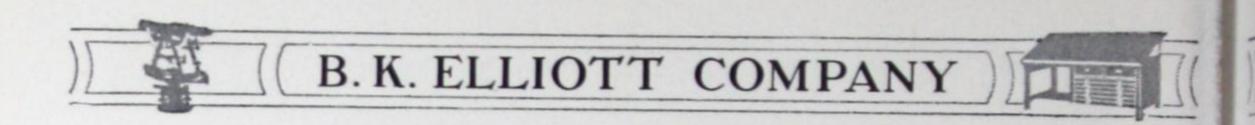
This is an opaque cloth for making exceptionally durable prints. It is particularly valuable where the print is to be subjected to extra-heavy wear and tear. From a practical standpoint, LIN-O-BLU CLOTH PRINTS serve a good purpose in the shop as well as for a permanent reference file.

7029B2	Lin-O-Blue Cloth	50 Yds.	10 Yds.
	30 inches wide		
	36 inches wide		
	42 inches wide		
	Sheets In Sizes Desired		

IF YOU ARE NOT USING ELLIOTT'S LIN-O PAPERS, WRITE FOR SAMPLES.

See Price List Inside Back Cover

Some Page 29B Joseph



LIN-O PAPERS

LIN-O BLU RAPID PRINTING SPEED BLUE LINE

70:	301 (8017) 17# Ba			02 (8019) 20½# Bas	sis		(8024) 24# Basis	
WIDTH 24"		10 Y	DS.		25 Yds.			50 Yds.
30"								
36"								
42"								
54"								
			Popula	r Sheet S	izes			
Package of	8½x11	9x12	11x17	12x18	17x22	18x24	22x34	24x36
100 Sheets								
250 Sheets								

LIN-O-BLU REGULAR PRINTING SPEED BLUE LINE

	70304 (811) 17# Ba		70:	305 (8119 20½# B		7030	6 (8124) 24# Basis	
WIDTH 24" 30" 36" 42" 54"		10 Y	DS.		25 Yds			50 Yds.
			Popula	r Sheet S	izes			
PACKAGE OF 100 SHEET 250 SHEET		9x12		12x18	17x22	18x24	22x34	24x36

54"

PAC

250

WII

250

LIN-O-BLU EXTRA RAPID PRINTING SPEED BLUE LINE

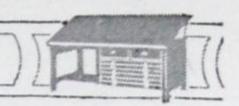
	70307 (841) 17# B		703	308 (8419 20½# B			9 (8424) 24# Basis	
WIDTH 24"		10 Yı	os.		25 Yds.		4	50 Yds.
30" 36"								
42" 54"								
			Popula	r Sheet S	izes			
PACKAGE OF 100 SHEETS 250 SHEETS		9x12	11x17	12x18	17x22	18x24	22x34	24x36

Any Other Sheet Sizes Desired—Ask For Separate Price List

See Price List Inside Back Cover

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LIN-O PAPERS

LIN-O-RED RAPID PRINTING SPEED RED LINE

70311 (7017)

70312 (7019)

70313 (7024)

17# Basis

20½# Basis

24# Basis

22x34

WIDTH

10 YDS.

25 YDS.

24"

30"

36"

42" 54"

10 YDS.

Popular Sheet Sizes

9x12 8½x11

11x17 12x18 17x22

18x24

24x36

50 YDS

OF 100 SHEETS

PACKAGE

250 Sheets

LIN-O-RED REGULAR PRINTING SPEED RED LINE

70314 (7117)

70315 (7119)

70316 (7124)

17# Basis

20½# Basis

24# Basis

WIDTH 24"

30"

36" 42"

PACKAGE

OF

9x12

25 YDS.

50 YDS.

100 SHEETS

8½x11

11x17 12x18

Popular Sheet Sizes

17x22

18x24

22x34

24x36

250 Sheets

LIN-O-BLACK RAPID PRINTING SPEED BLACK LINE

70317 (9017)

10 YDS.

70318 (9019)

70319 (9024)

17# Basis

20½# Basis

24# Basis

WIDTH

24" 30"

36"

42"

54"

8½x11 9x12

11x17 12x18 17x22

25 YDS.

18x24

22x34

24x36

50 YDS.

OF

250 Sheets

PACKAGE

100 Sheets

Any Other Sheet Sizes Desired—Ask for Separate Price List

Popular Sheet Sizes

See Price List Inside Back Cover

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POSI-BLAC

PAPERS AND CLOTHS

A semi-dry process for producing black lines on white background.

DIRECT POSITIVE PRINT PAPER AND CLOTH

POSI-BLACK products reproduce original tracings by producing black lines on a white background without the use of a negative. Either paper or opaque cloth positive prints can be produced quickly by two time-saving processes.

Many engineers find POSI-BLACK prints superior because the highly contrasting black lines improve the legibility of their prints. Additions and corrections can be made with ease by pencil, pen, watercolor, typewriter or rubber stamp. POSI-BLACK papers and cloths are used widely in the reproduction of machine designs, charts, specification sheets, topographic work, architectural drawings and many other subjects.

POSI-BLACK prints are made in a much shorter time than are blue prints. The paper is exposed under a transparent original to arc lamp, Cooper-Hewitt tube, quartz tube or sunlight. The developing solution is then applied to the sensitized side only and the black image appears immediately. Developing is done on a standard table developing machine.

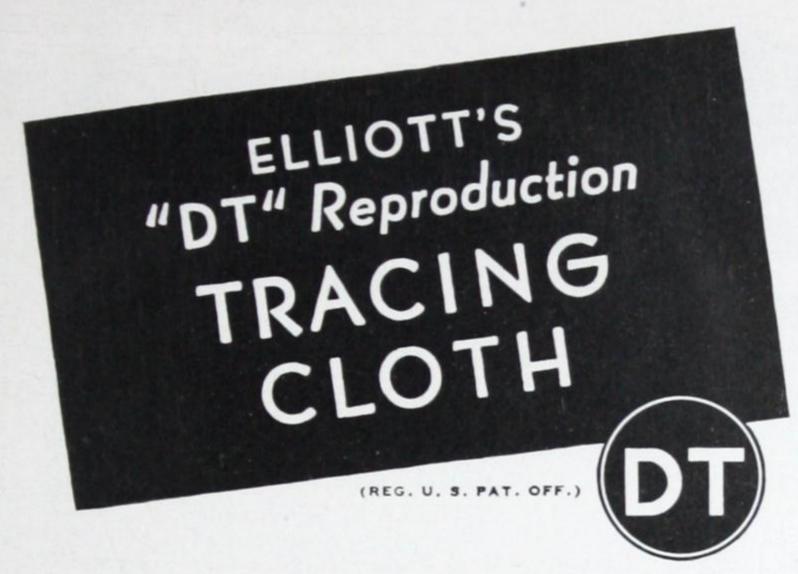
The two steps can be combined in one continuous process on any of the special printing and developing machines made for this purpose.

70321 Posi-Blac Paper—Thin 50-yard rolls	WIDTH, INCHES	30	36	42
70322 Posi-Blac Paper—Thick 50-yard rolls	INCHES 30	36	42	54
70323 Posi-Blac Cloth—Thin 50-yard rolls	WIDTH, INCHES	30	36	42
70324 Posi-Blac Cloth—Thick 50-yard rolls. 10-yard rolls. Posi-Blac Paper and Cloth can be furnished		30	36	42
		desired	SIZE.	
POSI-BLAC DE	VELOPER		D.	. Don
70325 Posi-Blac Developer—to make Half Gr 70326 Posi-Blac Developer—to make Quart of	allon of Solution			R Box

Instructions for mixing solution on every box

See Price List Inside Back Cover

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SHORT CUT... ORIGINALS TO TRACINGS

ELIMINATES HAND TRACING ... ACCURATE ...
PERMANENT ... AND INEXPENSIVE.

- PERMANENT OPAQUE BLACK LINES
- **EASY DEVELOPING QUALITIES**
- FAST PRINTING SPEED
- WIDE PRINTING RANGE
- FINE KEEPING QUALITIES
- WATERPROOFING WON'T SCALE OFF

SUBJECTS FROM WHICH "DT" TRACINGS CAN BE MADE

BLUE PRINTS

NEW TRACINGS
OLD TRACINGS
INK OR PENCIL DRAWINGS
SUBJECTS MADE ON OPAQUE PAPERS





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Size

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REPRODUCTION TRACING CLOTH

FOR MAKING REPRODUCED TRACINGS

D T—meaning Duplicate Tracings—Reproduction Tracing Cloth is a waterproofed tracing cloth treated with a special emulsion sensitive to light.

WHY ELLIOTT'S DEVELOPED D T REPRODUCTION TRACING CLOTH

Because of the insistent demand for a duplicate tracing cloth that is of the same high standards and qualities of other Elliott products, we developed D T Reproduction Tracing Cloth—a duplicate tracing process that is quick, accurate, much lower in cost than tracing by hand, and an exact positive copy of the original. Tracings made on D T Reproduction Tracing Cloth are errorless copies with permanent jet black lines produced on specially prepared waterproof tracing cloth.

SUBJECTS FROM WHICH TO MAKE TRACINGS UNLIMITED

No matter what the subjects—blue prints, new tracings, old tracings, ink or pencil drawings, parts of various drawings to be assembled into one tracing, or subjects made on opaque papers—they can be duplicated successfully on D T Reproduction Tracing Cloth. Mutilated subjects—worn, dirty, cracked or torn—can be duplicated, too, if the lines and figures are fairly clear and legible. Blocking out can be done, if necessary, on the negative and new work or blocked out work redrawn on the D T Tracing.

D T TRACINGS NOT LIMITED TO SAME SIZE

Larger or smaller D T Tracings can be made from the original subject by making a photographic negative the size needed and printing from it. Should you not have photographic equipment to make a negative, we will make one for you at a reasonable cost.

HOW TO MAKE D T TRACINGS

D T Tracings are made by contacting a negative made from an original tracing on our "Seal-Brown" Print negative paper and exposed in any Blue Print Machine or Vacuum Frame (we use and recommend a vacuum frame to insure proper over-all contact and sharpness of lines). Should the original drawing be an opaque subject it is necessary to make a photographic film. Only water and developer baths are required to finish a D T Tracing. Little extra equipment, therefore, is needed to an already established blue printing department. Instructions for mixing developer solution are on every box of developer.

Where you have no facilities for making D T Tracings our complete, expert reproduction services are available. Prices upon application.

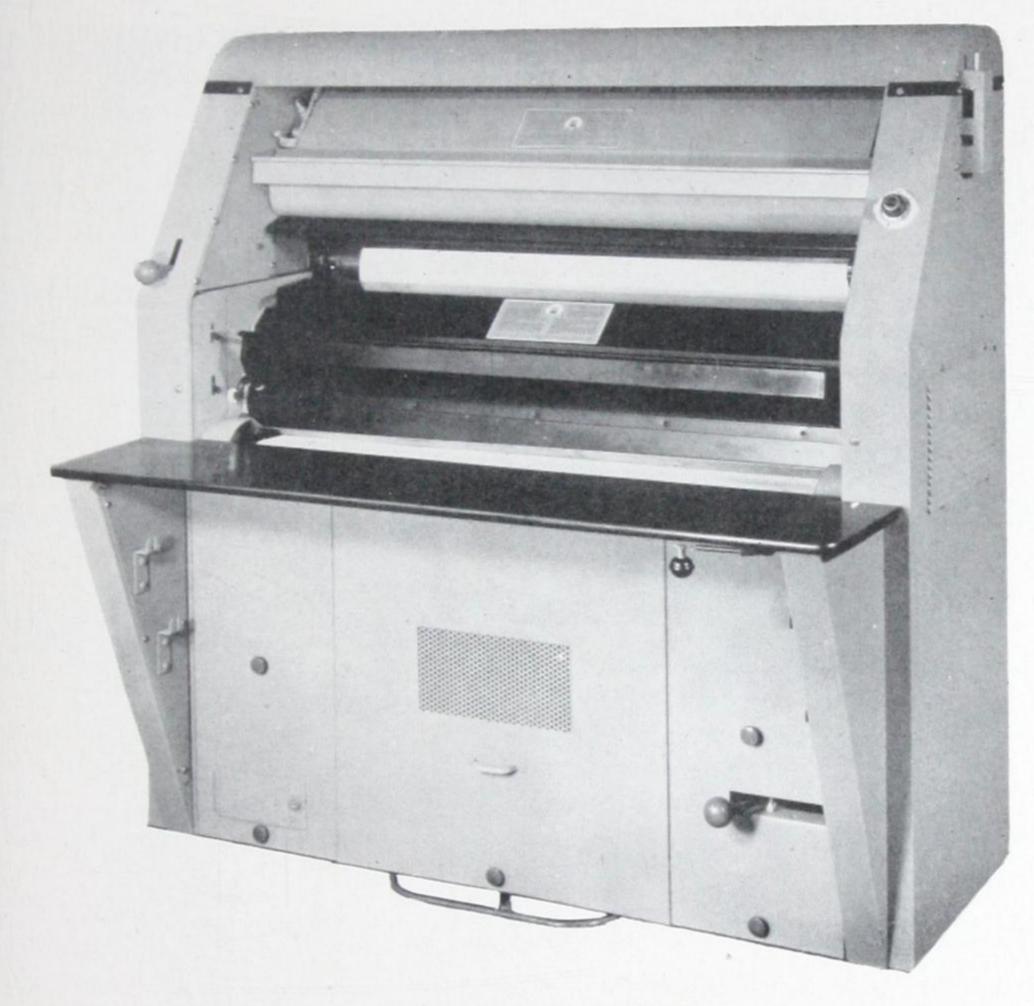
D T REPRODUCTION TRACING CLOTH

70341 30" Wide	PER YARD	5YDS.	20 YDS.	50 Yps.
30" Wide				
70342 D T Developer Salts				PER BOX

See Price List Inside Back Cover

PAGE 34 Johnson





PEASE "55-G"

CONTINUOUS WHITEPRINTING AND DEVELOPING EQUIPMENT (DRY DIRECT)

PEASE "55-G"— the newest and finest medium production Whiteprinting and Developing Machine (Dry Direct Process) on the market, possess so many exclusive, outstanding features, and so much greater printing and developing speed and capacity, that, considering initial investment, it is in a distinct class by itself, completely outperforming any other machine at anywhere near the price. Exhaustive tests prove conclusively that Pease "55-G" has "more of everything" you want. It is made in 42 inch size only.

33/3% More Printing Speed—superior production speeds, ranging from 5 feet per minute up to 12 feet or even more per minute.

75% More Developing Speed—actual developing speeds range up to 12 feet per minute, far surpassing those of any combination Whiteprinting and Developing Machines selling for within one thousand dollars of its price.

50% More Printing Light—new 55 watt per inch high pressure mercury tube provides intense, even printing light over entire width of the contact glass.

PEASE "55-G" Features . . .

- 1. Pease "55" Printer—is used only in combination with Pease "G" Developer and cannot be purchased separately. It is made in 42 inch width and will print average tracings at speeds ranging from five to ten feet per minute, and up to twelve feet or even more per minute using good clean onionskin tracings.
- 2. Sliding "Vacuum-Like" Contact—smooths out all wrinkles in tracings and prevents errors in printing. The 55 watt per inch tube is mounted close to contact glass, and an Alzak reflector provides greatest possible illumination. A foot treadle releases tension on contact band, allowing easy withdrawal of tracings.
- 3. 55 Watt Per Inch High Pressure Mercury Tube—gives an intense, even printing light over the entire area of tracing, assuring fidelity of reproduction and uniform exposure.
- 4. Adjustable Light Shutter—provides regulation of exposure without changing mechanical speed when tracings of varying density are run.
- 5. Safety Features—make it impossible to touch tube when current is on. Special high voltage cable that will not deteriorate from light or heat is used.
- 6. Low And High Gear Shift Lever—provides an overall speed range from six inches in low gear to twelve feet or even more per minute in high gear.
- 7. Pease "G" Developer—cannot be operated separately because it is driven directly from the motor which drives the printer and is synchronized with the printer. It has a developing speed range of from six inches up to twelve feet per minute and cannot be run as an individual unit.
- 8. Undeveloped Prints—which have gone through the "55" Printer are fed into the developer at front of machine. After developing, they are returned to a tray at front above developer feed board. A special endless rubber belt carries exposed prints over a perforated stainless steel plate.
- 9. Rate Of Aqueous Ammonia Flow—is controlled by a needle valve. Amount of ammonia in storage tank can be read in glass tube of control mechanism. Ammonia is contained in a stainless steel supply tank within machine.

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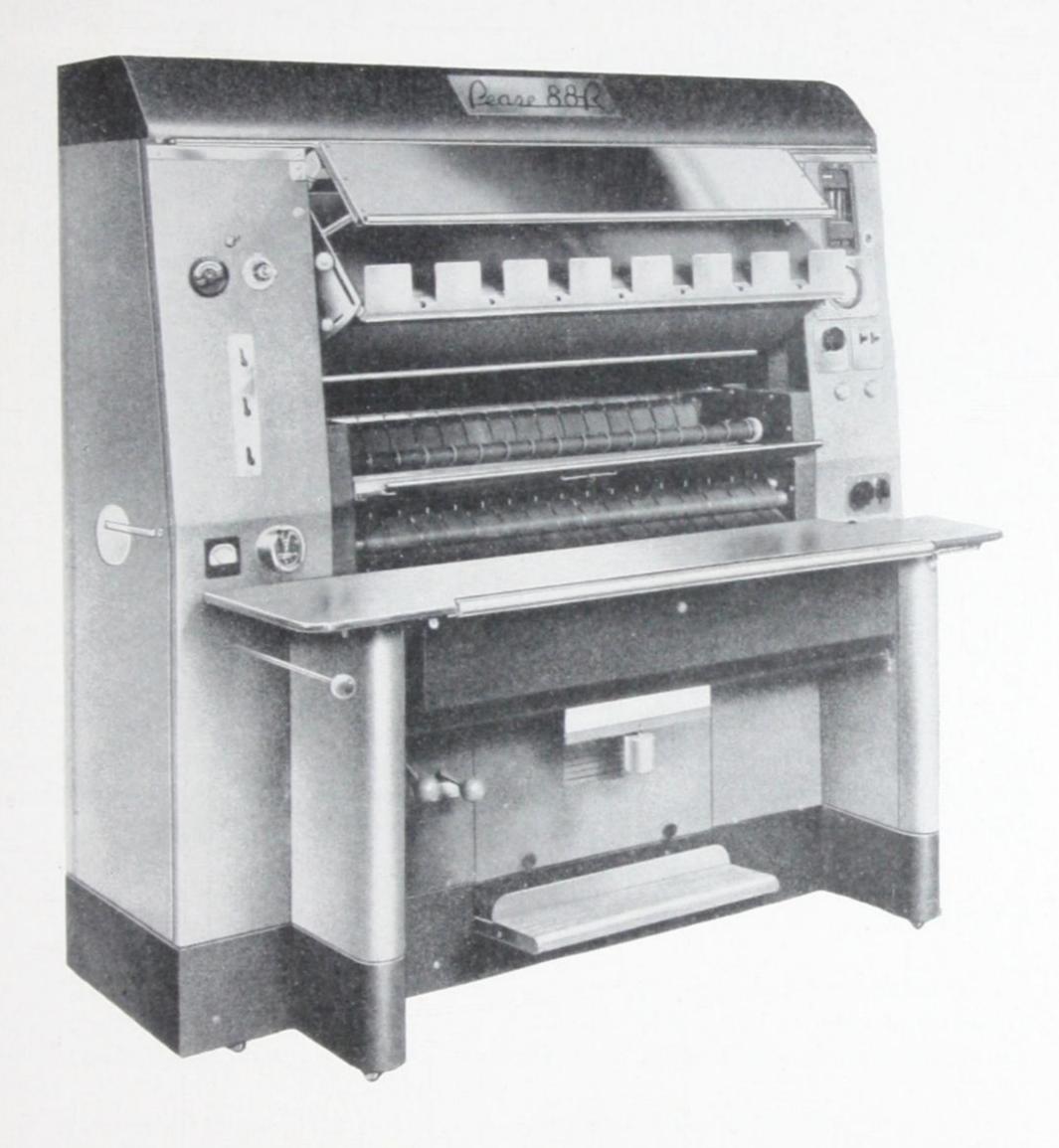
10. Positive Fume Exhaust—consists of blower fan and special vent which prevents accumulation of ammonia fumes in the room.

70361 Pease 55-G... Each

See Price List Inside Back Cover







PEASE "88-R"

COMPLETE CONTINUOUS WHITEPRINTING AND DEVELOPING EQUIPMENT (DRY DIRECT)

Pease "88-R" - Complete Continuous Whiteprinting and Developing Machine, produces Whiteprints (blue, black or red lines on white background). Either cut sheets or rolls, at an actual production speed of 30 feet per minute. Further, it assures the finest quality reproduction because it removes all guesswork. All controls are positive and once they are properly set all else is practically automatic and finished prints are delivered in a matter of seconds. It is made in 42 inch size only.

PEASE "88-R" Features . . .

- 1. Revolving Or Sliding Revolving Contact—(patented feature) combines desirable features of both methods. Clutch lever allows operator to instantly convert from straight revolving, for small tracings to sliding revolving for tracings in poor condition and large tracings.
- 2. Positive Tracings Separation—prevents tracings from carrying through machine. Paper and tracings are definitely separated for repeat printing even when fed with considerable overlapping.
- 3. Easy Feeding—paper and tracings are easily fed onto the continuous tapes of the printer. The feeding entrance is such that it automatically unrolls turned edges of tracings.
- 4. Light Control—75 watt per inch High Pressure Mercury Tube inside the 8¼ inch diameter pyrex cylinder provides maximum printing speed. An alzak reflector also serves as a variable light shutter for controlling the printing speed.
- 5. Ammonia Feed Control—manual or automatic at operator's option. A knurled knob is used for manual control, while a switch, with high and low speed positions gives automatic control. Glass tubes indicate rate of flow. A switch operates pump which carries ammonia from storage tank to developer tank.

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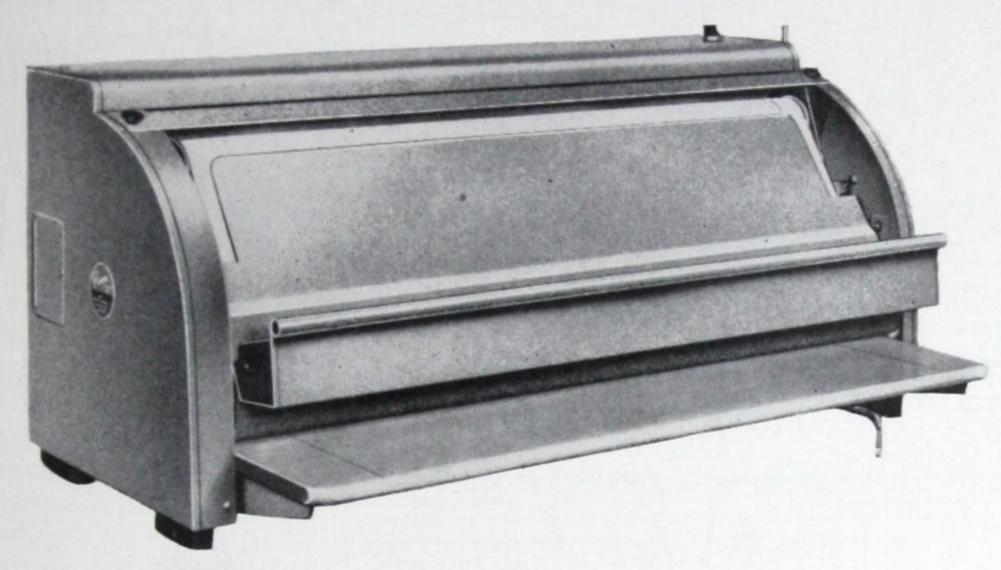
- 6. Developer Band Control—a knurled knob shifts special developer band to right or left at operators option. Thus uneven band wear is eliminated.
- 7. Economical Use of Ammonia—either the manual or automatic method is economical and uses less ammonia than other whiteprint machines, providing complete control of ammonia consumption under all conditions of room temperature and material.
- 8. Developer Instantly Disengaged—lever under feed board disengages entire developer mechanism from printer, providing economy in use of ammonia.
- 9. Stacked Tracings And Prints Save Time—tracings are returned to front of machine stacked face down for repeat printing. Cut sheet prints are stacked for easy handling, front or rear at operator's option. Rolled stock is rerolled, at rear of machine, ready for trimming.
- 10. Operator Comfort And Safety—better work, confidence in the machine and peace of mind, are assured because all these factors have been build in. All dangerous moving parts and electrical circuits are behind locked doors which automatically break the circuit when opened.

70381 Pease 88-R.... EACH

See Price List Inside Back Cover







PEASE "J"

WHITEPRINT DEVELOPING MACHINE

Pease "J"—is the fastest and best table type Whiteprint Developing Machine on the market because it has 10 feet per minute developing speed, unequalled performance, small initial investment and low operating cost. It developes dry direct process prints (ammonia vapors), and can be used with any Blueprinting or Direct Process Printing Machine you have or purchase. Pease "J" operates efficiently with any dry direct process paper.

EASILY THE LEADER—Pease "J" Whiteprint Developing Machine outclasses all other table style machines in:

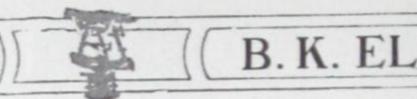
- 1. Superior Speed—with two developing speeds—five feet (low) and ten feet (high) per minute actual developing speed, faster than any other.
- 2. Quality Performance—produces finished whiteprints which are flat, with solid blue lines and clean white backgrounds.
- 3. Exceptional Ease Of Operation—because designed for simplicity of control. Just feed the exposed prints in and the developed prints are returned to the front of the machine.
- 4. Complete Ammonia Evaporation—is accomplished by using an adequate heating coil below the three evaporating trays. This feature insures superior developing results and economy.
- 5. Positive Fume Exhaust System—consisting of blower and special vent, carries all ammonia fumes away so they do not accumulate.
- 6. Long Life—means a machine built to stand up under long hours of day in, day out continuous operation.
- 7. Sturdy Construction—framework is all steel, arc welded. Housing is heavy gauge sheet metal. All parts which come into direct contact with ammonia are made of stainless steel.

70391 Pease "J"

EACH

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mono Page 39 Johnson





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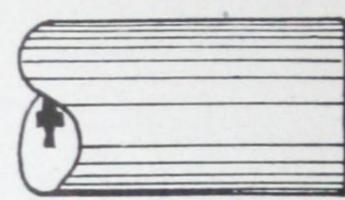
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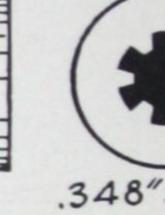
ARC LAMP CARBONS ACTUAL SIZE DIAGRAMS



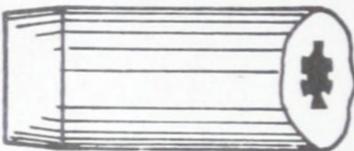


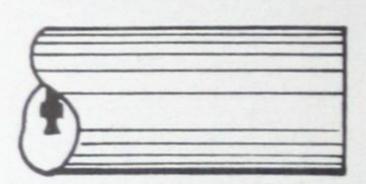


Length 12 inches.

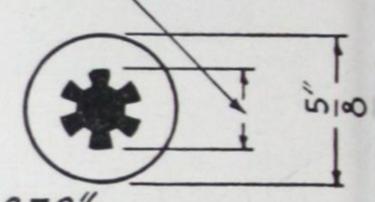


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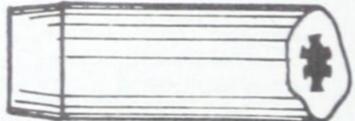




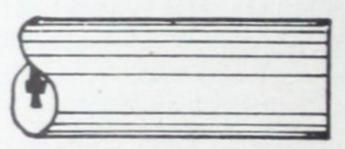
Length 12 inches.

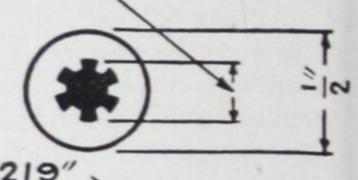


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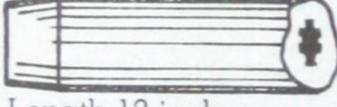


Length 12 inches.

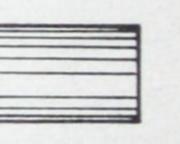


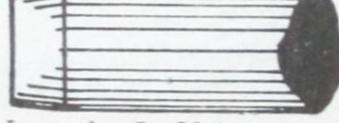


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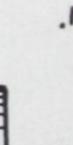


Length 12 inches.

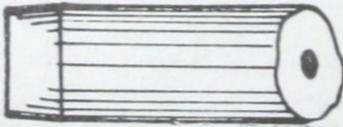




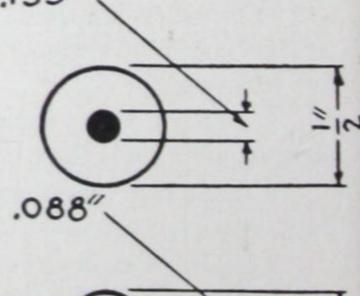
Lengths 2, 63/4, 9, 12 and 16 inches.

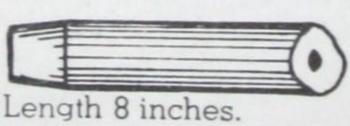


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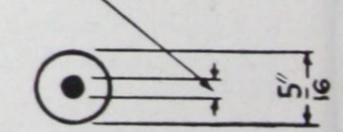


Lengths 2, 63/4, 9, 12 and 16 inches.



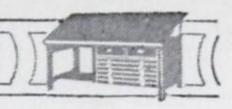






See Price List Inside Back Cover





EACH

ARC LAMP CARBONS

National Carbons provide the very best results because they are specially manufactured for blue printing and photographic arc lamp purposes. They burn long with a steady arc and produce a uniform light, rich in actinic value so necessary for accurate exposure and fine reproduction.

NATIONAL ENCLOSED ARC LAMP CARBONS

		Еасн	PER 50	Per 250
70411	Size ½ x 12 Solid			
70412	Size ½ x 12 Cored			
70413	Size ½ x 9 Solid			
70414	Size ½ x 9 Cored			
70415	Size ½ x 16 Solid			
70416	Size ½ x 16 Cored			
70417	Size 5/16 x 8 Cored			
70418	Size ½ x 6-3/4 Solid			
70419	Size ½ x 6-3/4 Cored			
		Елсн	Per 150	Per 750
704110	Size ½ x 2 Solid			
	Size ½ x 2 Cored			

NATIONAL WHITE FLAME CARBONS FOR OPEN ARC LAMPS

			Елсн	Per 50	Per 250
704112	Size 10MM x 12 inc	hes Plain			
704113	Size 10MM x 12 inch	nes Copper Coated			
704114	Size ½ x 12 inches	Plain			
704115	Size ½ x 12 inches	Copper Coated			
704116	Size 5/8 x 12 inches	Plain			
704117	Size 5/8 x 12 inches	Copper Coated			
704118	Size 3/4 x 12 inches	Plain			
704119	Size ¾ x 12 inches	Copper Coated			
704120	Size 1/8 x 12 inches	Plain			
704121	Size 7/8 x 12 inches	Copper Coated			

GLOBE BRUSH AND CARBON PLIERS



Brush by when cleaning globes.	
ful tool saves carbons and to	

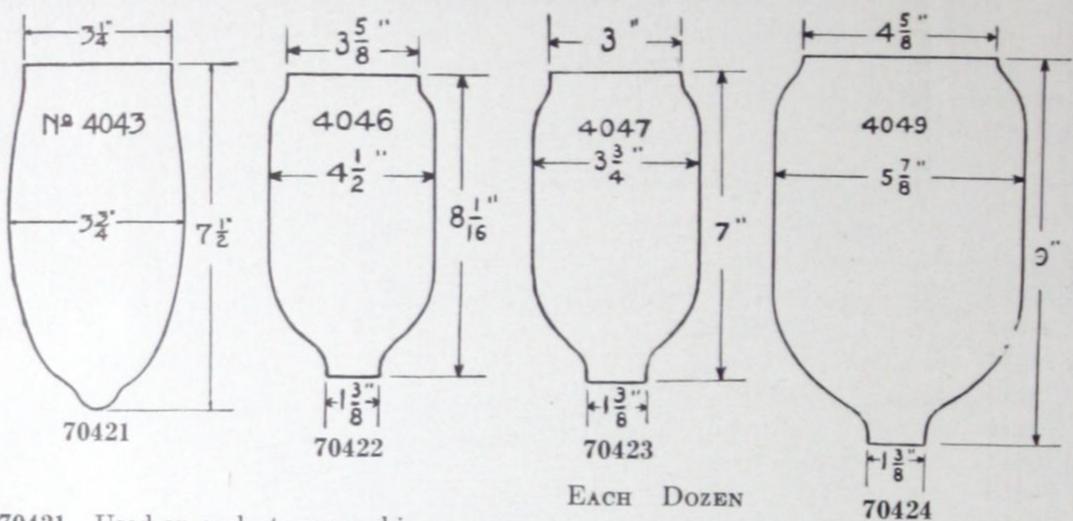
See Price List Inside Back Cover





BLUE PRINT LAMP GLOBES (Thermex)

FOR PEASE BLUE PRINT MACHINES



70421 Used on early type machine...

70422 Used on No. 11 B. P. Machine and Type U Arc Lamps on Senior Vertical...

70423 Used on latest Continuous Machines and Junior Vertical....

70424 Used on Senior Vertical with Super-Actinic Lamp installed.....

"PROTECT-O-PRINT"

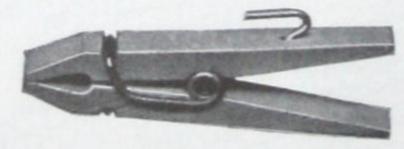
Protects Prints from Grease and Dirt

In machine shops, particularly, Protect-O-Print is most appreciated. Blue and Blue Line Prints, Brown and Brown Line Prints and Black and White Prints, coated with Protect-O-Print, using either a brush, atomizer or air-brush, are easily wiped clean of grease and dirt... keeping every part of the print readable and minimizing the possibility of error where figures or lines otherwise might be obscured. Merely by taking a cotton or woolen cloth and wiping the print, it becomes as clean and fresh as when it was first printed. Use Protect-O-Print to protect your prints.

70425 Protect-O-Print. PINT QUART GALLON



70425



70426 Wood Clothes
Pins. For hanging
blue prints while
drying.

Per dozen.....

70426

70427 Metal Clothes Pins. For hanging blue prints while drying. Per dozen.....

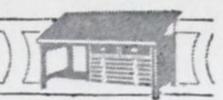


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See Price List Inside Back Cover

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ERASING FLUIDS



70431

"ELLCO"

ERASING FLUIDS

For Use on Blue Prints

Architects, Engineers and Draftsmen everywhere find "Ellco" White, Yellow and Red Erasing Fluids the ideal erasing fluids for blocking out, making alterations, corrections, markings, or tintings on blue prints or blue line prints. "Ellco" Erasing Fluids come in convenient sized glass bottles (15% oz.) ready for use with pen or brush. Colors register true red or yellow.

PER BOTTLE

70433 "Ellco" "Yellow" Erasing Fluid

For marking or tinting blue prints, 1% oz.

"ELLCO"

BROWN ERASING FLUID

For Use on Brown Prints

"Ellco" Brown Erasing Fluid makes quick, clean corrections and alterations on brown prints and brown line prints. Do not subject corrected print to repeated printing exposures.

PER BOTTLE

70434 "Ellco" "Brown" Erasing Fluid, 15/8 oz.....



70434



70435 A

"ELLCO" "A" AND "B" ERASING FLUIDS

After mixing equal parts of both "A" and "B" Fluids, a solution is obtained that makes complete and permanent erasures on Photocopies, Photographs and Brown Prints. Caution: Handle with extreme care, keep away from open sores and the mouth, as it is poisonous.



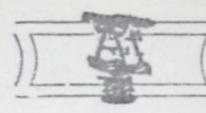
70435 B

15% Oz. ½ PINT 1 PINT EACH BOTTLE EACH BOTTLE EACH BOTTLE

70435 "Ellco" "A" and "B" Erasing Fluids....

See Price List Inside Back Cover

mone Page 43 Johnson







"ELLCO"

BLUE PRINT RIBBON

Needs No Backing-Up With Carbon Paper

70441

From among the many Blue Print Ribbons we have tested, this is the only one we have discovered that gives dense, opaque typewriter characters without using carbon paper for backing-up. For writing specifications, typing on tracing paper and cloth or other transparent material . . . "Ellco" Blue Print Ribbon is superior . . . producing excellent Blue Prints. Another feature of this ribbon is that the ink does not spread around the typewriter characters, the cause of a "halo" or "fog" seen so frequently on Blue Prints.

Can be supplied for most makes of standard typewriters.

EACH

70441 "Ellco" Blue Print Ribbon

POTASH (Bichromate of) FOR INTENSIFYING BLUE PRINTS

Recommended for use in continuous Blue Printing Machines. Can also be used for hand developing of Blue Prints. A solution of 1 oz. of potash to 1 gallon of water will intensify the color and make prints more permanent. Clear water should be applied before and after the potash bath.

BIC HERWITT POLISH

70442 Bichromate of Potash.....

5 LBS. 10 LBS.

70442

"BLU-SET"

A highly concentrated chemical for intensifying blueprints. Eliminates all danger of potash poisoning or skin irritations. Directions on bottle.

70443 Blue-set.....

PINT

HYPO CRYSTALS

Fixing Salts for Brown Prints and Negatives. See page 28 for instructions.

70444 Hypo Crystals....

PER LB. 5 LB.

25 LB.

BLUCO SOLVENT

A solution for removing blue print solution that gathers on the rollers on blue print equipment. It cleans quickly and easily. Excellent for cleaning drain pipes, also.

PER GALLON

Quickstick, Coldwater Paste Powder. A concentrated vegetable glue in dry powder form for use on continuous blue print machines. Prepared for use in a few seconds. Dries almost instantly and will not pull apart.

70446.....

1 LB. CARTON

25 LB. CARTON

50 LB. DRUM

See Price List Inside Back Cover

PAGE 44 Johnson

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LIN-O CORRECTOR

For Correcting Lin-O-Red, Lin-O-Blu, and Lin-O-Black Prints or any other type of ammonia developed prints.

Set of three bottles, with instructions for use on box.

PER SET

Lin-O Corrector

SEPIA LINE CORRECTOR

This corrector is used to eliminate lines or make corrections on all transparent ammonia prints.

PER BOTTLE

AMMONIA

For Developing Lin-O Paper

GALLON

Ammonia (26°).....

AER-NU NEUTRALIZER

Neutralizes Ammonia and other offensive odors.

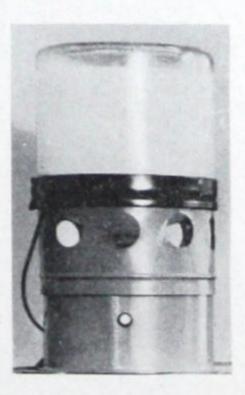
A portable Evaporator Unit, 7 x 13 inches using a chemical solution. This unit will serve 10,000 cubic feet of space or less by varying the wattage of the heating bulb from 15 to 100 watts (AC-DC).

Container holds one gallon AER-NU liquid, furnished ready to use.

Leaves no "after" odor.

Absolutely harmless, non-toxic.

No fire hazard, nothing to light or burn. Non-inflammable.



70454

EACH

AER-NU Portable Unit..... 70454

AER-NU Liquid..... 70455

GALLON

See Price List Inside Back Cover

mone Page 45 Jeneses

REPRODUCTION DEPARTMENT

In both Pittsburgh and Cleveland, we operate large printing departments, using the latest types of printing equipment for making various kinds of reproductions.

Our modern continuous electric printing, washing and drying equipment enables us to complete any size order for printing in the shortest possible time.

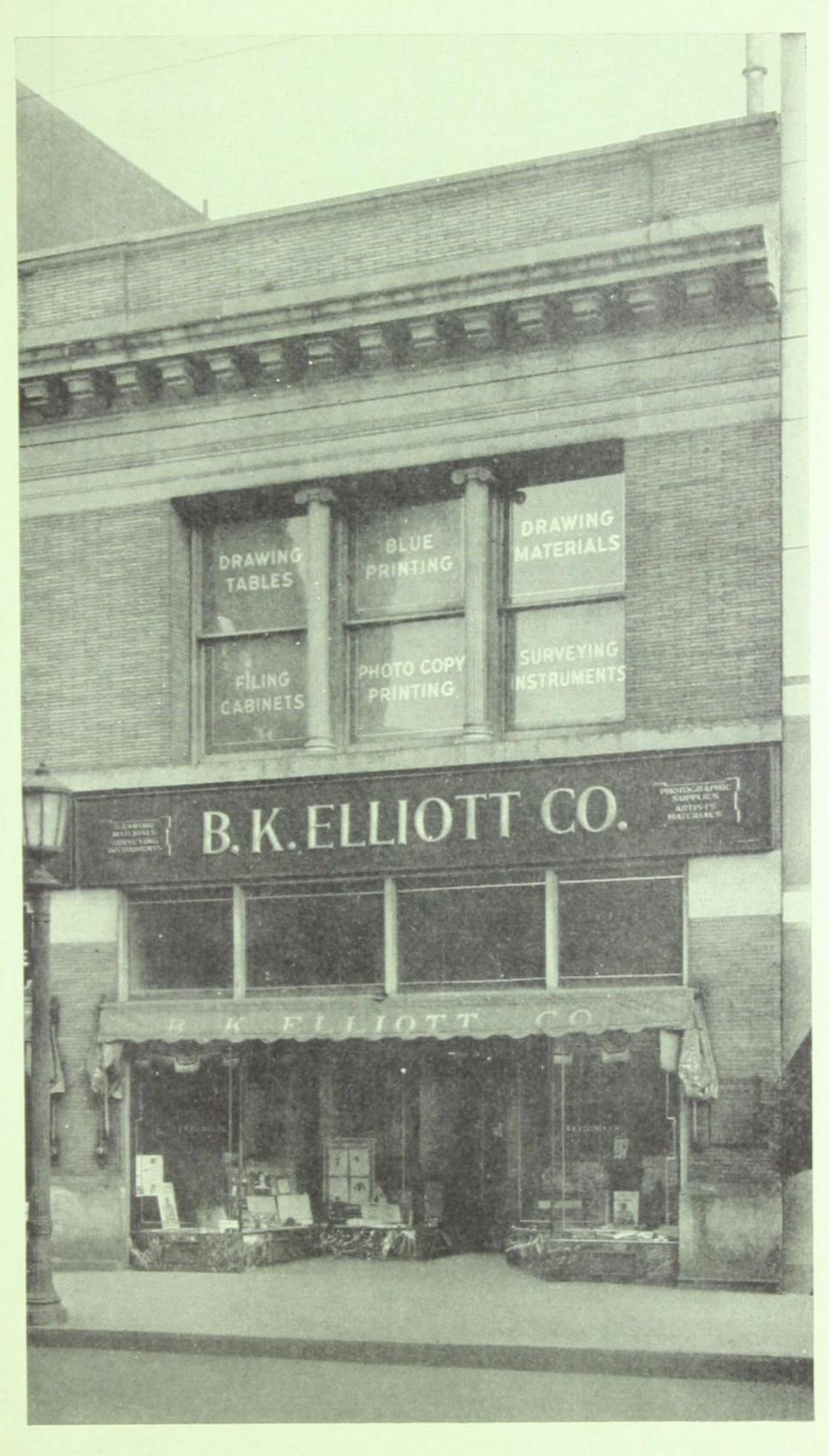
Prints on either paper or cloth, whichever is desired, up to 54" wide, of any length, may be made in one continuous sheet, and when desired can be finished "mounted on muslin."

Only the best materials are used in our Printing Departments, thereby securing for you the best possible prints according to the condition of your tracings.

As we insure the tracings and prints of out-of-town customers when returning them by parcel post or express, we suggest that you insure them at their proper value when sending them to us so that in case of loss or damage, you are adequately protected.

Various processes are given below:

- BLUE PRINTS—Pure white lines on deep blue background. Made on high grade rag stock paper in thin, medium or thick weights or on thin or thick cloth. ANY LENGTH AND UP TO 54 INCHES IN WIDTH.
- BLUE LINE PRINTS Deep blue lines on pure white background. Prints are made on exactly the same materials as blue prints. ANY LENGTH AND UP TO 54 INCHES IN WIDTH.
- SEAL-BROWN PRINTS (Negatives) Pure white lines on a seal-brown background. Made on 100% rag stock paper in thin or thick weights (thin is recommended where brown line or blue line prints are to be made). ANY LENGTH AND UP TO 54 INCHES IN WIDTH.
- SEAL-BROWN LINE PRINTS (Positives) Seal-brown lines on pure white background. Made on either thick or thin 100% rag stock paper or linen cloth. ANY LENGTH AND UP TO 54 INCHES IN WIDTH.
- LIN-O-PRINTS—Positive Blue, Black or Red Line Prints with a white background. Made direct from tracings or transparent original subjects. This reproduction process is available for those preferring direct white prints over Blue Prints, Brown Line Prints or Blue Line Prints.



Branch House — 733 Prospect Avenue — Cleveland, Ohio

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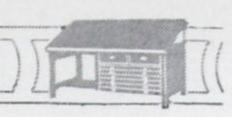
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REPRODUCTION DEPARTMENT

- "D T" CLOTH TRACINGS A short-cut from original ink or pencil drawings to tracings. Tracings are errorless copies with lines of permanent jet black produced on specially prepared waterproof tracing cloth either reduced, enlarged or in exact size. Blocking out of any portion of the original can be done when making the "D T" tracing and the changed section drawn in after the tracing is made. Because of their extreme durability, Federal, State, County and Municipal Governments and many corporations use "D T" tracings extensively. Tracing sizes POSSIBLE 117 INCHES BY 54 INCHES WIDE.
- PHOTO-LITHO PRINTS The quick, accurate, economical method of reproducing 100 or more exact copies of any subject either enlarged, reduced or the same size in black and white or color on any material from tracing paper to cardboard. Sizes possible postage stamp size to 36" x 48".
- PHOTOCOPY PRINTS (Negatives) White lines on a black background. A rapid, errorless, permanent, inexpensive photographic paper copy of anything written, printed, drawn or traced. Subjects can be enlarged, reduced or kept the same size. Prints possible from postage stamp size up to 18" x 24".
- FOTO-DRAFT—Contact Reflex Photo-copy Prints, from transparent or opaque subjects, made the same size as originals.

Either Negative or Positive reproductions can be furnished any size up to 40 x 108 inches.

- PHOTOCOPY PRINTS (Positives) Black lines on a white background and made from a photocopy paper negative or any negative subject such as a blue print or brown print.
- GIANT PHOTOCOPY PRINTS These prints are similar to photocopy prints as original subjects can be reduced, made the same size, or enlarged. Enlargements can be made up to 40 inches wide by 10 feet long in one piece. Even larger prints can be made, however, by joining enlargements, giving almost unlimited sizes. They are particularly desirable for enlarging or reducing tracings, maps, and blue prints, as well as any subject typed, printed, written or drawn. Made on a heavy, tough paper that will stand a lot of handling.





patch

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7049

7049

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DOT

Foto

7049

TUBES FOR PRESERVING PAPER



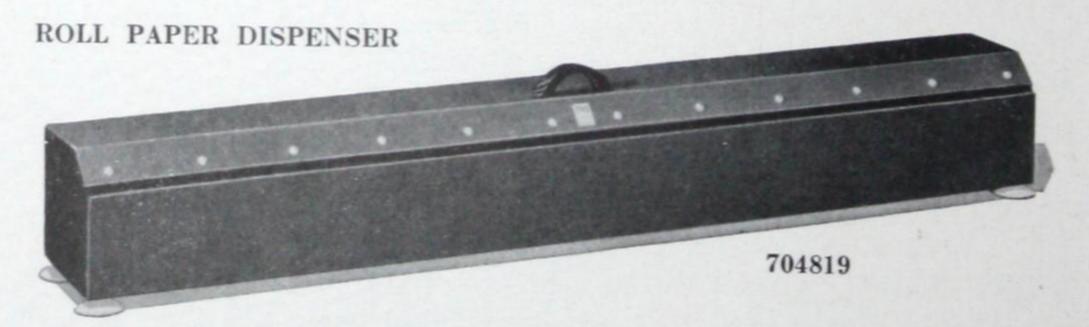
Made of best tin, with tight fitting cap; for keeping broken rolls of blue print paper and brown print paper from light and moisture. Can also be used for filing drawings.

	LENGTH IN INCHES	DIAMETER IN INCHES	Елсн
704801	. 24	21/2	
704802	. 31	21/2	
704803	. 37	21/2	
704804	43	21/2	
704805		21/2	
704806	0.4	31/2	
704807	01	31/2	
704808	37	31/2	
704809		31/2	
704810		31/2	
704811	0.1	5	
704812	01	5	
704813	0=	5	
704814		5	
704815	55	5	
Quotations made on special sizes upon app		,	

METAL END TUBES

Dustproof containers for cloth or paper drawings. Made of heavy cardboard, with telescoping cap. Metal ends clinched to cardboard. Covered with glazed green paper.

		EACH
704816	Metal End Tubes, 31 x 3 inches	2.1.011
701015	Tree Line Tubes, of A o menes	
704817	Metal End Tubes, 37 x 3 inches	
704818	Metal End Tubes 43 v 3 inches	
704818	Metal End Tubes 43 v 3 inches	



A light-proof container for storing and dispensing tracing papers or any sensitized papers. Provides safe storage without deterioration. Accommodates up to a 50 yard roll. Sheets of desired length can be cut off with a straight, smooth edge.

Built of heavy gauge steel, with welded corners. Inclined roll support keeps roll in front, no matter how small. Furnished with rubber suction feet. Cover is removable, has full length roll hinge, and tempered steel cutting edge. Finished in rich olive green.

704819	Roll Paper Dispenser for 36" width rolls	Еасн
704820	Roll Paper Dispenser for 42" width rolls	

See Price List Inside Back Cover

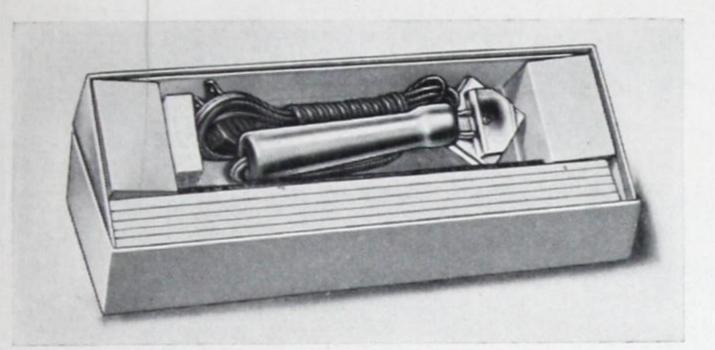
型

B. K. ELLIOTT COMPANY



VANISHING PATCH KITS

FOR MENDING TORN TRACINGS



Vanishing Patch is a dry transparent film which is placed directly over the tear, then it is ironed onto the sheet with a miniature "flatiron" called the "patchwelder."

Vanishing Patch won't wrinkle or buckle the tracing . . . it won't "leak out"

70491

along the edges when run through a blue print machine at normal speed . . . it won't deteriorate with age nor discolor . . . and it won't cause tracings to stick to each other in filing cabinets. Besides, the patch is completely invisible on blue prints made from patched tracings.

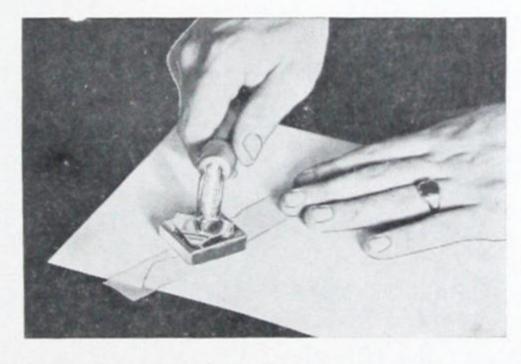
Complete kit contains 250 1" x 11" strips of Vanishing Patch, 1 thermostatically controlled Patch Welder and 1 felt rubbing pad.

The Patch Welder operates on 110 volt A. C. current. Just plug it in, and within two minutes it is ready to apply the Vanishing Patch.

EACH

70491 Vanishing Patch Kit.....70492 Vanishing Patch Refills, 250

to box.....



Patch Welder in Use

THERMIUM FILM

Thermium Film is a protective, transparent covering that you can easily apply to your important papers, records, documents, drawings, etc. It protects them from dirt, smudging and tearing, greatly prolonging their life and preventing costly errors. Thermium Film is so clear and transparent that the printed matter covered with this film is actually more readable than before the film was applied. It will not discolor with age nor will the adhesive medium come out at sides.

You simply iron over the sheet with a warm flatiron or one of our specially designed Fotowelders (see page 50) or Patch Welders above.

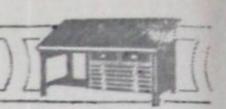
70493 Thermium Film, in cut sheets:

7049

Size, Inches	Per Doz.	PER 100
8½ x 11		
11 x 15½		
15½ x 20		
94 Thermium Film, in rolls:	100 Ft.	500 Ft.

10½ inches wide.....

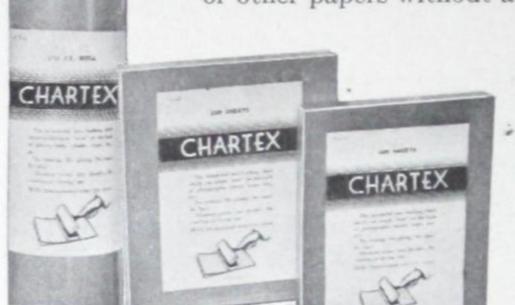




CHARTEX DRY-MOUNTING CLOTH

IRONS ON

Chartex Dry-Mounting Cloth, furnished in either sheets or rolls, enables you to apply a cloth backing to your maps, charts, blueprints, or other papers without any elaborate equipment.



When mounted on Chartex, the map or print is reinforced against tearing, will not dry out or become brittle, but will remain pliable over an indefinite period of years.

Just place a sheet of Chartex on the back of the subject to be mounted, pass a heated flatiron or Fotowelder over the Chartex and your sheet is mounted.

Prints do not change size or curl when mounted with Chartex.

	Chartex Dry-Mounting Cloth inches		FT. 5	0 FT.	100 FT
70502	Chartex Dry-Mounting Cloth—Sheets	12	SHEET	s 100	SHEETS
9	" x 12"				
11	" x 14"				
12	X 18"				
18	" x 94"				

FOTOFLAT DRY MOUNTING PAPER

Fotoflat is used for the same purposes as Chartex; but being paper it is less costly. It can also be used to hold prints back to back.

70503 Fotoflat Dry Mounting Paper 16 inches wide, 100 ft. rolls		PER ROLL
70504 Fotoflat Dry Mounting Paper Sheet Sizes:	12 Sheets	Per Gross
8 x 10" 11 x 14" 14 x 17" 16 x 20"		

FOTOWELDERS

Used to iron on Chartex, Fotoflat and Thermium Film. Made in three sizes, they are equipped with accurate thermostatic controls adjusted to the proper heat for these mediums.

70505

70505 Small Welder for tacking, or use with Vanishing Patches.....

70506 Medium Welder for small prints

70507 Large Welder for larger prints . .

See Price List Inside Back Cover

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TRIMMING SHEARS

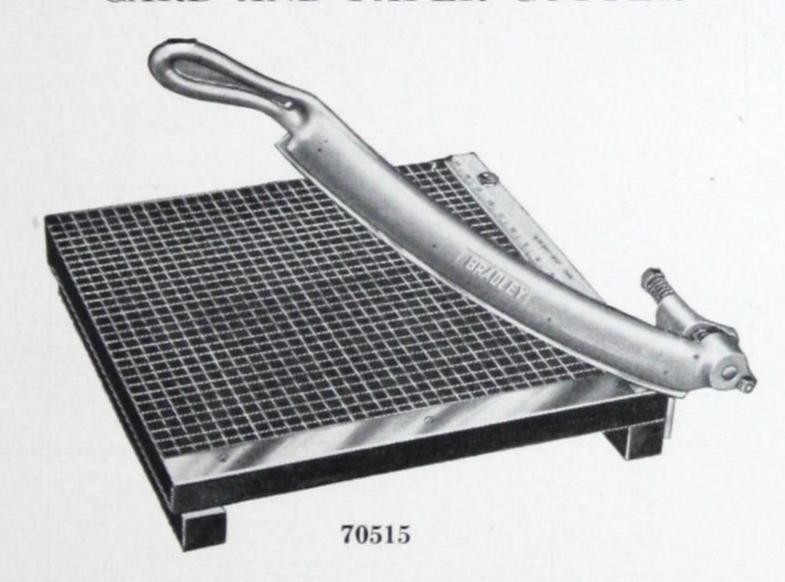
EXTRA QUALITY



	EACH
70511	Trimming Shears, extreme length 9 inches overall
70512	Trimming Shears, extreme length 10 inches overall
70513	Trimming Shears, extreme length 12 inches overall
70514	Trimming Shears extreme length 14 inches overall

These Shears are especially adapted for trimming blue prints, drawings, tracings, etc.; made of high grade material, with long, thin blades of perfect temper and true cutting edges.

CARD AND PAPER CUTTER



For trimming prints or cutting cardboard. These Paper Cutters are built for heavy duty. They have two piece cutter blade, knife easily removed for sharpening. Strong spring keeps handle up, allowing easy adjustment of sheet to be cut.

70515 Paper Cutter, 12" blade, 12 x 12" Table. Ruled in ½" squares. Adjustable Ruler Gauge.
70516 Paper Cutter, 15" blade, 15 x 15" Table. Ruled in ½" squares. Adjustable Ruler Gauge.
70517 Paper Cutter, 18" Blade, 18 x 18" Table. Ruled in ½" squares. Adjustable Ruler Gauge.
70518 Paper Cutter, 24" Blade. Heavy Duty Cutter, 24 x 20" Table. Will cut anything from tissue to heavy cardboard or light metal.

See Price List Inside Back Cover

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FOTO-DRAFT

CONTACT PRINTERS

Streamlined

Compact

Efficient

For Reproductions of Tracings, Blue Prints, Documents, or any important papers. Either transparent or opaque subjects can be reproduced photographically on various papers or cloths listed on the following pages. They eliminate the necessity of a darkroom, expensive lighting equipment, or focusing of lenses or cameras.

FOTO-DRAFT

RADE MARK

VACUUM TYPE CONTACT PRINTERS



The cabinet is constructed in two sections for ease of handling. The upper half comprises the light source, printing surface, vacuum cover, and panel board. The lower section contains a drawer for storage of unexposed paper, a compartment for chemical supplies and the vacuum pump and motor. The vacuum cover is provided with a built-in spring and pivot counterbalance which requires no space outside the cabinet and assures finger-tip operation.

Two sets of lights, controlled by either a manual switch or an automatic electric timer, are provided; white for making positive prints and amber for making reflex negatives, or reproducing blueprints and similar low contrast copy. A small pilot light on the panel board lights while exposure is in progress.

The vacuum pump is controlled by a manual switch. Capacity is adequate for rapid operation and release of vacuum is automatic and immediate upon termination of exposure.

70521 Foto-Draft Vacuum Contact Printer
Printing Surface 30" x 40" *1/4 HP, 110 Volt, 60 Cycle, 4.2 Amp.....

70522 Foto-Draft Vacuum Contact Printer
Printing Surface 40" x 60" *1/6 HP, 110 Volt, 60 Cycle, 4.2 Amp.
*Be sure to mention current at time of ordering.

See Price List Inside Back Cover

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FOTO-DRAFT

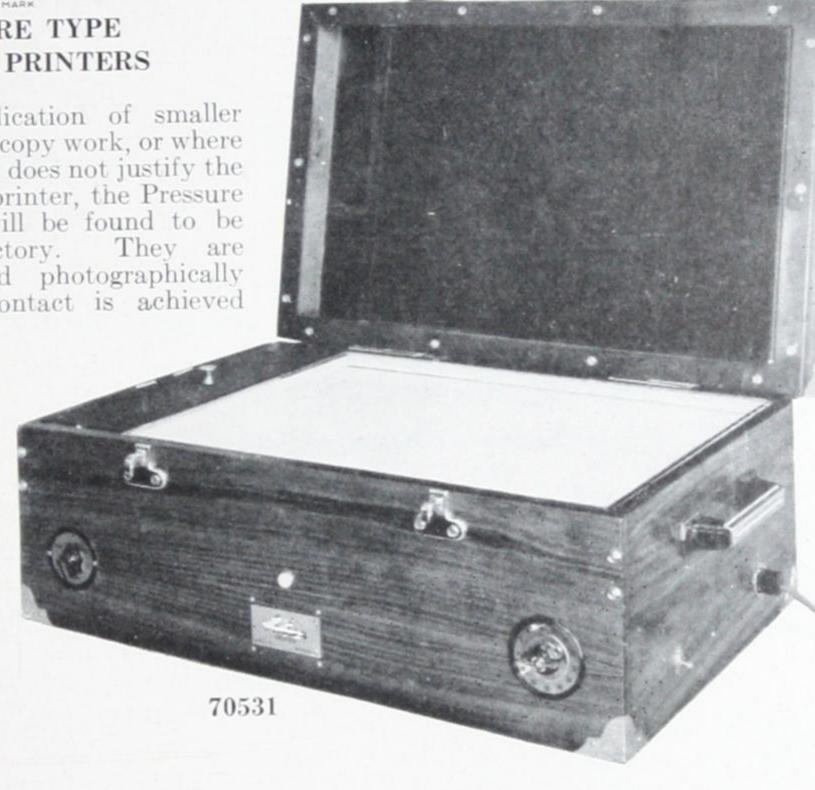
CONTACT PRINTERS

FOTO-DRAFT PRESSURE TYPE CONTACT PRINTERS

For the duplication of smaller drawings, for office copy work, or where the volume of work does not justify the cost of a vacuum printer, the Pressure Contact Printer will be found to be eminently satisfactory. They are sturdily built and photographically correct. Good contact is achieved

through the use of a spring pressure cover.

Provided with two sets of lights: white for making positive prints, and amber for making reflex negatives, or for reproducing blueprints and similar low contrast copy. The lights are controlled by an accurate mechanical timer or may be manually operated for long exposures.



EACH

Foto-Draft Pressure Printer, 10" x 14" copying surface..... 70531

Foto-Draft Units 70532 consisting of Machine, electric print dryer, squeegee stand, rubber squeegee, three enameled trays, two amber glass jugs. Complete Units, 10" x 14" copying surface..... Complete Units, 14" x 19" copying surface..... Complete Units, 22" x 24" copying surface.....

70533	Foto-Draft Electric Print Dryer, 10" x 15"	
	Foto-Draft Electric Print Dryer, 16" x 21"	
	Foto-Draft Electric Print Dryer, 23" x 25"	

70534	Foto-Draft Enameled Foto-Draft Enameled	Squeegee Squeegee	Stand, Stand,	$\frac{15''}{23''}$	x 20 x 25)"	

70535	Foto-Draft White H	Enamel Trays,	Acid-resistant	11" x 14"
	Foto-Draft White I	Enamel Travs.	Acid-resistant	16" x 20"
	Foto-Draft White I	Enamel Trays,	Acid-resistant	23" x 28"

See Price List Inside Back Cover

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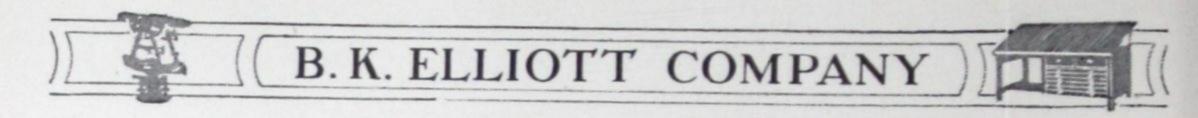


FOTO-DRAFT

CONTACT PRINTING PHOTOGRAPHIC PAPERS

Elliott's Foto-Draft Papers, Cloths, and Film are contact printing reproduction materials especially designed for making photographic reproductions of pencil tracings, specifications, letters, documents and records of all types. Exposures may be made by the normal or reflex processes on any commercially available contact printing equipment, such as the portable light boxes, vacuum frames, and continuous printing machines.

Foto-Draft materials are sensitized with contrasty **photographic emulsions** which will reproduce the finest detail. They are especially formulated to give the maximum contrasts of blacks and whites, and may be used to reproduce subjects with copy on one or both sides.

Foto-Draft Developing and Fixing Chemicals will properly develop and fix these photographic materials.

FOTO-DRAFT OFFICE COPY PAPERS

Recommended for making reproductions of records, contracts, legal data, checks and general reproduction work. Processed in normal Mazda light.

Cut Sheets-In Standard Packages of 100 Sheets*

705401 705402 705403 705404 705405 705406	Extra Thin Foto-Draft Paper. Thin Foto-Draft Paper. Medium Foto-Draft Paper. Thick Foto-Draft Paper. Duplex Medium Foto-Draft Paper. 100% Rag Medium Foto-Draft Paper.		9x12	11x17	12x18	17x22	24x36
	Rolls—In Standard Le						
705407 705408	Extra Inin Foto-Draft Paper	81/2"	133/4"	24"	30"	36"	42"
705409	Thin Foto-Draft Paper Medium Foto-Draft Paper						
705410 705411	Thick Foto-Draft Paper Duplex Medium Foto-Draft Paper						

*Prices on Special Size Sheets and Rolls Furnished on Application

100% Rag Medium Foto-Draft Paper . .

FOTO-DRAFT VELLUM

Ideal for reproductions of blue prints, drawings, or tracings on paper. Suitable for use in blue print, Ozalid, and B & W machines. Will take erasures and additions or corrections in ink or pencil.

705413	Foto-Draft Vellum	In Sheets				
	SHEETS 12	8½x11	9x12	11x17	14x17	20x24
	50 100					
705414	- or Dian Chain	In Rolls				
	ROLL WIDTH Per 60 Ft. Roll	81/2"	133/4"	20"	30"	40"
	Note: Prices on other shee	t sizes upon request.				

See Price List Inside Back Cover

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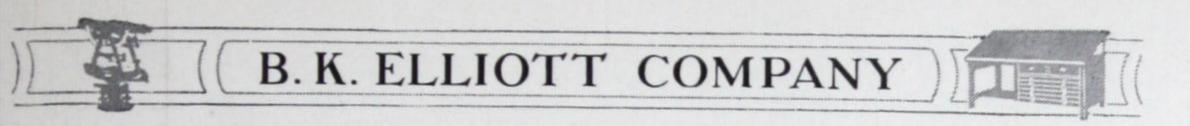


FOTO-DRAFT

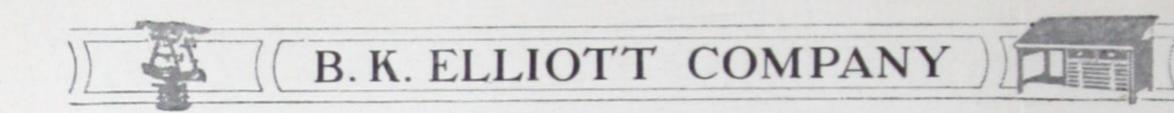
FOTO-DRAFT WATERPROOF TRACING CLOTH

This cloth is distinguished by a fast-drying, waterproof base. Its surface will tolerate repeated erasures and will readily accept additions or corrections in ink or pencil without destroying the basic fabric.

destro	ying the basic fabric.					
70551	Foto-Draft Waterproof Tracing Clot	h				
	In	Sheets				
Si	HEETS	8½x11	9x12	11x17	14x17	20x24
	12					
	50					
	100					
70552	Foto-Draft Waterproof Tracing Clot	h				
	In 1	Rolls				
R	OLL WIDTH	81/2"	133/4"	20"	30"	40"
. P	er 60 Ft. Roll	-				
	FOTO-DRAFT A	CETATE F	ILM			
A	n Orthochromatic Film, recommended	d for contac	t negativ	ves and	positives	where
	num of detail is essential. Non-inflam					
70553	Foto-Draft Acetate Film					
	In Sh					
Sı	HEETS	$8\frac{1}{2}$ x11	9x12	11x17	14x17	20x24
	12					
	50					
	100					
70554	Foto-Draft Acetate Film In R	colls				
R	OLL WIDTH:	81/2"	133/4"	20"	30"	40"
P	er 60 Ft. Roll					
	FOTO-DRAFT	DEVELOP	ER			
70555	Foto-Draft Developer		D	oz. Can	s Pi	ER CAN
	mall Size-to make 2 quarts of solution	n				
	arge Size—to make one gallon of solu					
	FOTO-DRA	FT FIXER			,	
70556	Foto-Draft Fixer		D	oz. Can	s Pr	ER CAN
S	mall Size-to make 2 quarts of solution	n				
	arge Size—to make 1 gallon of solution					
			~			

See Price List Inside Back Cover

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"PRECISE"

PROFILE AND CROSS SECTION PAPERS AND CLOTHS





70: 70: 70: 70: 70:

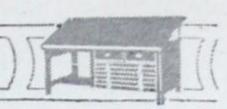
Our "PRECISE" Profile and Cross Section Cloths and Papers, in sheets and continuous rolls, described on pages 57 to 74 inclusive, have met with well merited approval and command a large sale.

Only well-seasoned stock is used, which reduces the possibility of expansion and contraction of the cloth and paper.

We describe these as follows:

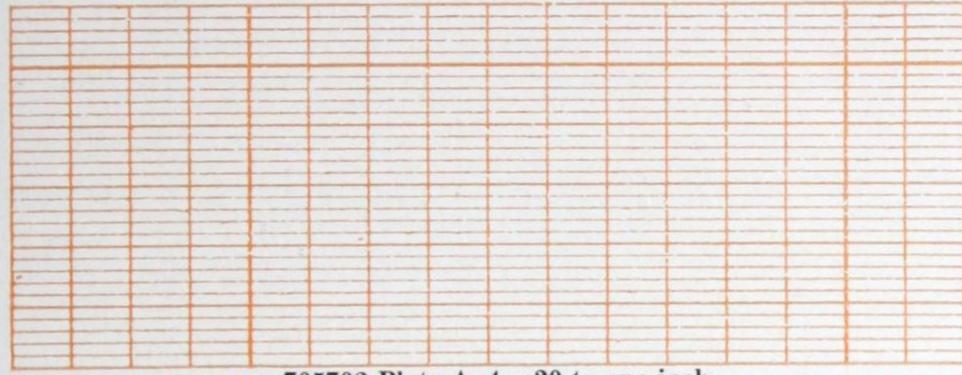
- DRAWING PAPER: The paper possesses great strength, standard thickness, is hard sized and of good erasing quality.
- MOUNTED DRAWING PAPER: This is same as drawing paper described above, but mounted in the same careful manner as are our "LENOX" papers described on page 12.
- TRACING PAPER: Very best quality, highgrade stock, possessing unusual strength and good transparency.
- TRACING CLOTH: All Profile and Cross Section Tracing Cloths are of the well-known "Arkwright" brand the best American made cloth—which is usually specified on Government inquiries.





"PRECISE"

PROFILE AND CROSS SECTION PAPERS AND CLOTHS

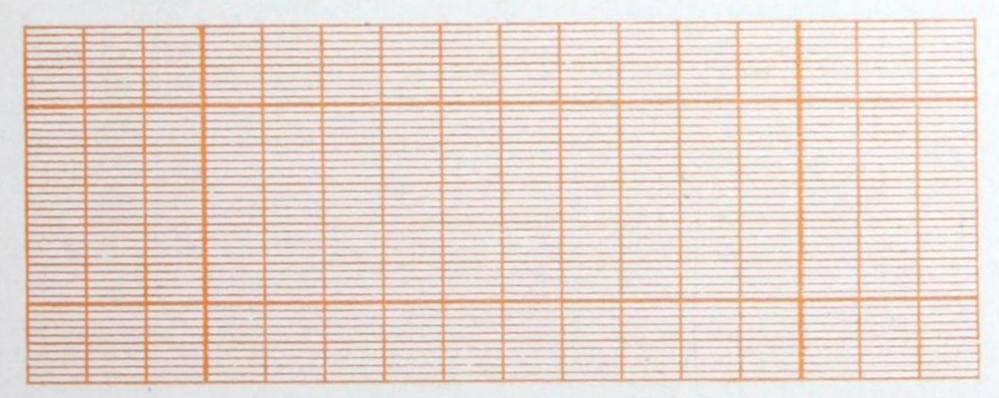


705702 Plate A, 4 x 20 to one inch

PLATE A—CONTINUOUS

PER PER ROLL YARD

]	ENGRAVING
	Green, 20 in. wide, drawing paper, 50-yard rolls
705702	Orange, 20 in. wide, drawing paper, 50-yard rolls
705703	Green, 10-in. wide, drawing paper, 50-yard rolls
705704	Orange, 10 in. wide, drawing paper, 50-yard rolls
705705	Green, 20 in. wide, mounted on muslin, 20-yd. rolls.
705706	Orange, 20 in. wide, mounted on muslin 20-yd. rolls.
	Orange, 20-in. wide, tracing paper, 50-yd. rolls
	Orange, 10 in. wide, tracing paper, 50-yd. rolls
	Orange, 20 in. wide, tracing cloth, 20-yd. rolls



705711 Plate B, 4 x 30 to one inch

PLATE B-CONTINUOUS

PER PER ROLL YARD

705710	Green,	20 in	wide,	drawing	p
	^			*	

ENGRAVING

paper, 50-yd. rolls..... 705711 Orange, 20 in. wide, drawing paper, 50-yd. rolls.....

705712 Green, 9 in. wide, drawing paper, 50-yd. rolls.... 705713 Orange, 9 in. wide, drawing paper, 50-yd. rolls.....

705714 Green, 20 in. wide, mounted on muslin, 20-yd. rolls.....

705715 Orange, 20 in. wide, mounted on muslin, 20-yd. rolls..... 705716 Orange, 20 in. wide, tracing paper, 50-yd. rolls.....

705717 Orange, 9 in. wide, tracing paper, 50-yd. rolls..... 705718 Orange, 20 in. wide, tracing cloth, 20-yd. rolls.....

See Price List Inside Back Cover

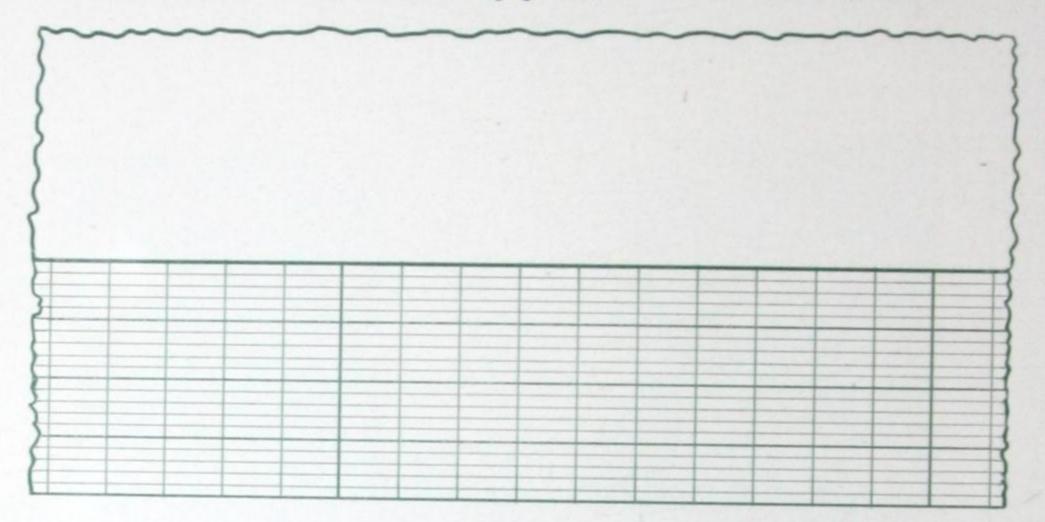
Common Page 57 Porono





"PRECISE" PROFILE-PLAN PAPERS AND CLOTHS

Width of paper 22 in.



Our Profile-Plan Papers and Cloths have the ruling along the lower half of the paper, the upper half being blank, which provides space for necessary memoranda, sketches of cuts, fills, etc.

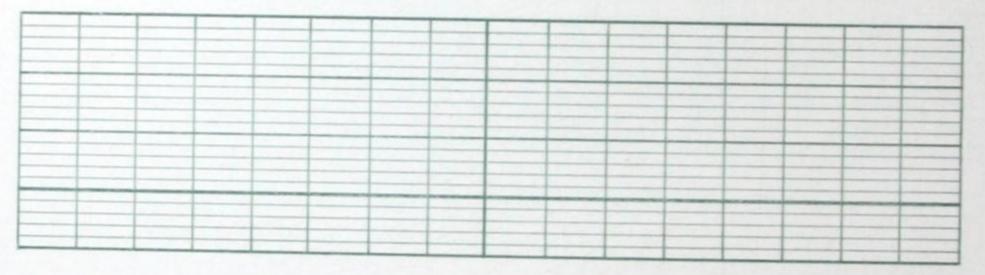


Plate A. 4 x 20 to one inch PER PER PRECISE PROFILE-PLAN PAPERS AND CLOTHS ROLL YARD

Green, engraving 10" wide, Drawing paper, 50-yd. roll...... 70581 70582 Orange, engraving 10" wide, Drawing paper, 50-yd. roll...... 70583 Orange, engraving 10" wide, Tracing paper, 50-yd. roll..... 70584 Orange, engraving 10" wide, Tracing cloth, 20-yd. roll.....

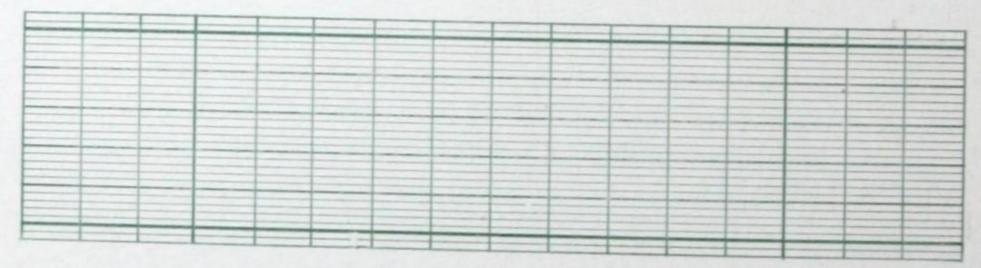


Plate B. 4 x 30 to one inch PER PER PRECISE PROFILE-PLAN PAPERS AND CLOTHS ROLL YARD Green, engraving 9" wide, Drawing paper, 50-yd. roll..... 70585 70586 Orange, engraving 9" wide, Drawing paper, 50-yd. roll.....

Orange, engraving 9" wide, Tracing paper, 50-yd. roll..... 70588 Orange, engraving 9" wide, Tracing cloth, 20-yd. roll..... See Price List Inside Back Cover

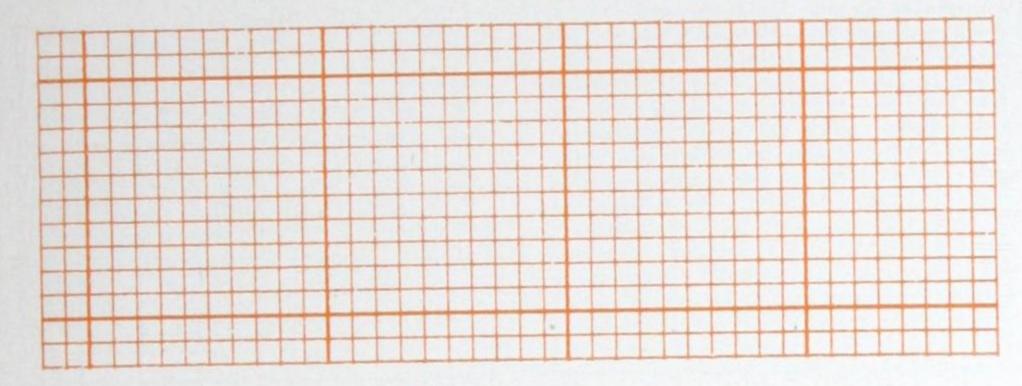
70587





"PRECISE"

CROSS SECTION PAPERS AND CLOTHS

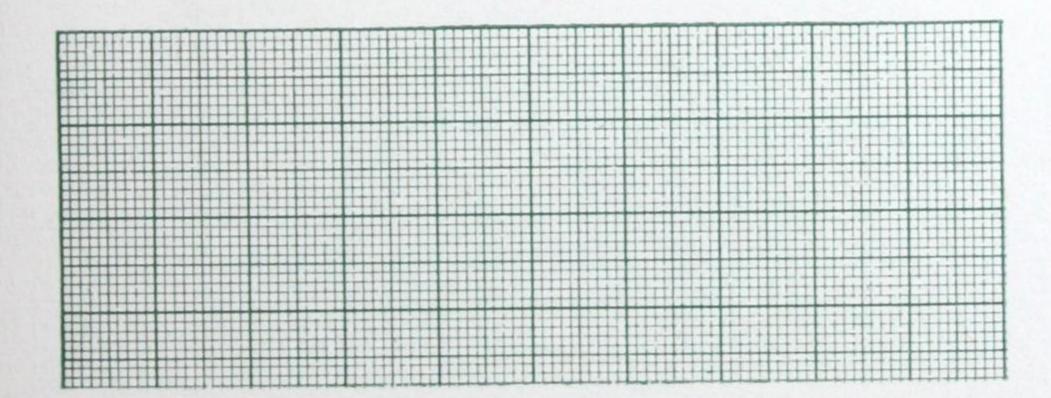


CONTINUOUS

10 x 10 to one inch

PER PER ROLL YARD

	TO A TO GO ONE MEN
I	ENGRAVING
705901	Green, 20 in. wide, drawing paper, 50-yd. rolls
	Orange, 20 in. wide, drawing paper, 50-yd. rolls
	Green, 20 in. wide, mounted on muslin, 20-yd. rolls
	Orange, 20 in. wide, mounted on muslin, 20-yd. rolls
705905	Orange, 20 in. wide, tracing paper, 50-yd. rolls
705906	Orange, 20 in. wide, tracing cloth, 20-yd. rolls
705907	Orange, 10 in. wide, Plain-Cross Section Tracing Cloth, 20-yd.
	nolls



705909 Millimeters

ENGRAVING

PER PER YARD ROLL

Green, 50 cm. wide, drawing paper, 50-yd. rolls..... 705908 Orange, 50 cm. wide, drawing paper, 50-yd. rolls..... 705909 Orange, 50 cm. wide, tracing paper, 50-yd. rolls..... 705910

Sample book will be sent on application

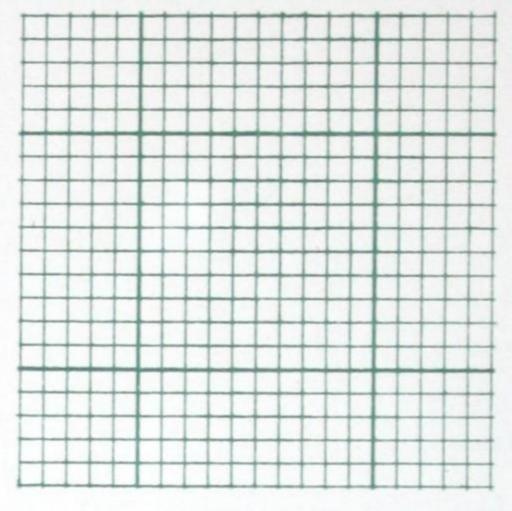
See Price List Inside Back Cover

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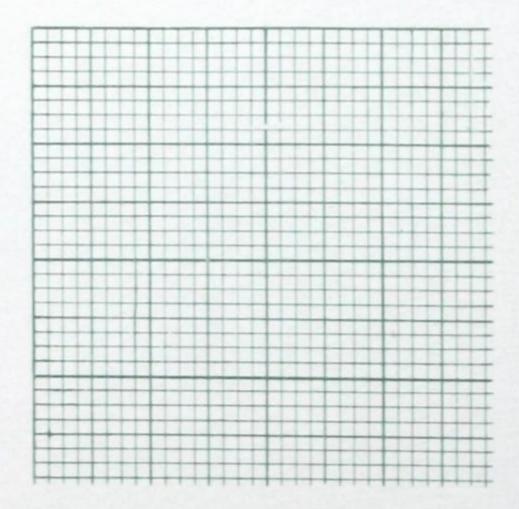
"PRECISE" CROSS SECTION PAPER ENGRAVED SHEETS

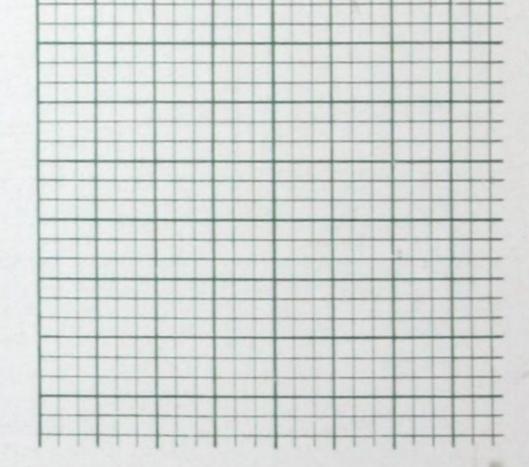


10 x 10 to one inch

8 x 8 to one inch

70602 70603 70604	Green drawing paper 10 x 10 to the inch Orange drawing paper 10 x 10 to the inch Orange tracing paper 10 x 10 to the inch Green drawing paper 8 x 8 to the inch Orange tracing paper 8 x 8 to the inch	ENGRAVING 16 x 20 16 x 20 16 x 20 16 x 20 16 x 20	SHEET SIZE 18 x 23 18 x 23 18 x 23 18 x 23 18 x 23	PER QUIRE
. 0000	Grange tracing paper ox o to the men	10 X 20	18 X 20	



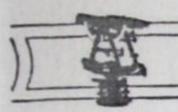


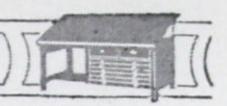
16 x 16 to one inch

12 x 12 to one inch

70607 70608	Green drawing paper 16 x 16 to the inch Orange tracing paper 16 x 16 to the inch Green drawing paper 12 x 12 to the inch	Engraving 16 x 20 16 x 20 16 x 20	SHEET SIZE 18 x 23 18 x 23 18 x 23	PER QUIRE
70609	Orange tracing paper 12 x 12 to the inch	16 x 20	18 x 23	

See Price List Inside Back Cover

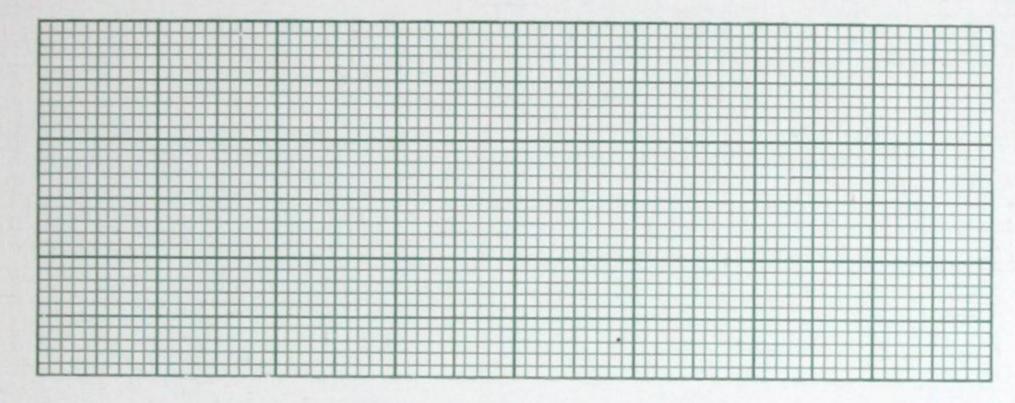




EACH

CROSS SECTION PAPER

IN SHEETS



70614

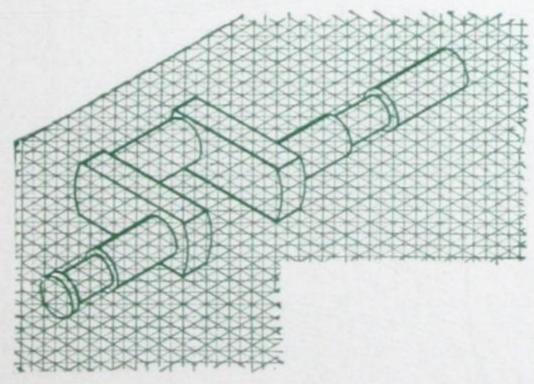
20 x 20 to the inch-fifth line heavy

		Color	Per 100	PER QUIRE
70611 70612	Sheets, engraving, 10 x 15 in., drawing paper	Olive Olive		
70613 70614	Sheets, engraving, 10 x 15 in., tracing paper	Orange Green		
70615	Sheets, engraving, $7\frac{1}{2}$ x 10 in., tracing paper Sheets, engraving, $7\frac{1}{2}$ x 10 in., drawing paper	Orange		

Special prices on orders for lots of 500 or more sheets.

Orders of 500 sheets or more can be made on any kind of paper and color without extra charge.

ISOMETRIC CROSS SECTION PAPER



A drawing on Isometric Paper may be scaled in three main directions, the axis of which are 120° apart, one being vertical, the other being at 30° from the horizontal; all horizontal lines are laid along the 30° line in either direction. A cube becomes a hexagon, and circles ellipses. It is especially adapted for use by machine designers, patent office draftsmen and architects; in fact, there is no branch of mechanical drawing or designing that can not use this paper to a distinct advantage.

70617 Ruled in green, in pads of 40 sheets, 6 x 9 inches.....

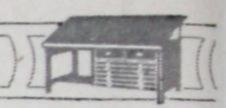
70618 Ruled in green, in pads of 40 sheets, 9 x 12 inches......

70619 Ruled in green, in package of 100 sheets, 12 x 18 inches

See Price List Inside Back Cover

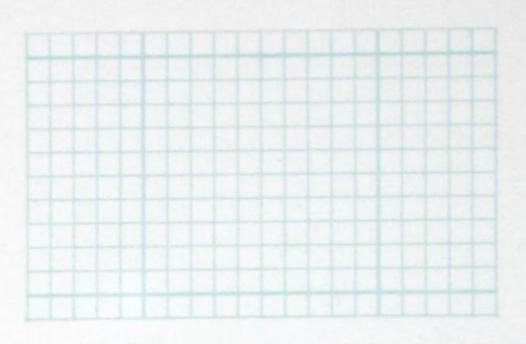
Some Page 61 Johnson

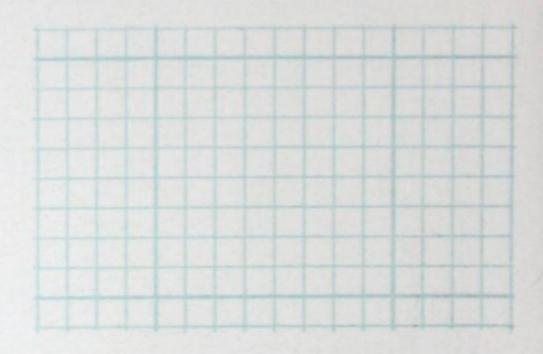




ord

RULED CROSS SECTION PAPERS





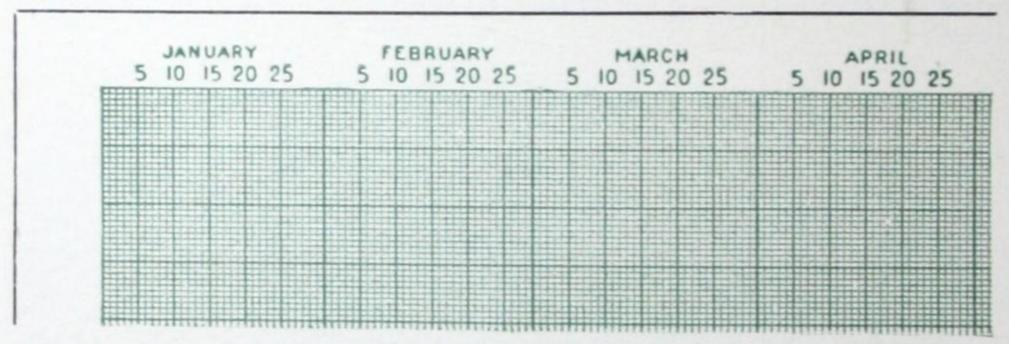
10 x 10 to one inch

8 x 8 to one inch

Ruled cross section paper of any desired ruling furnished to order.

RECORD SHEETS

Statistical Diagrammatic Charts for Progress of Work. One Year by Days



A convenient progress sheet for showing graphically the day by day progress of work, sales or other continuous data. The base line is divided into 366 equal parts, representing the number of days in the long year. Every fifth vertical line is numbered and is slightly heavier, with an extra heavy line for each of the twelve months. Of the horizontal lines, every tenth line is heavy giving 260 equal spaces the short way. Each month is plainly indicated at the top.

Tracing Paper, Orange...... 7" x 12" SHEET SIZE PER 100 PER DOZ.

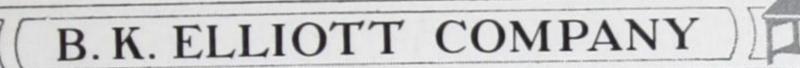
8" x 14½"
8" x 14½"
8" x 14½"

We have a larger sheet, also, same lay-out as above, except every 5th line on the horizontal is heavy, giving 150 spaces on short way, and 366 spaces the long way.

Tracing Paper, Orange...... 7½"x 14¾" SHEET SIZE PER 100 PER Doz. 7½"x 14¾" 11″x 16½" 11″x 16½" 11″x 16½"

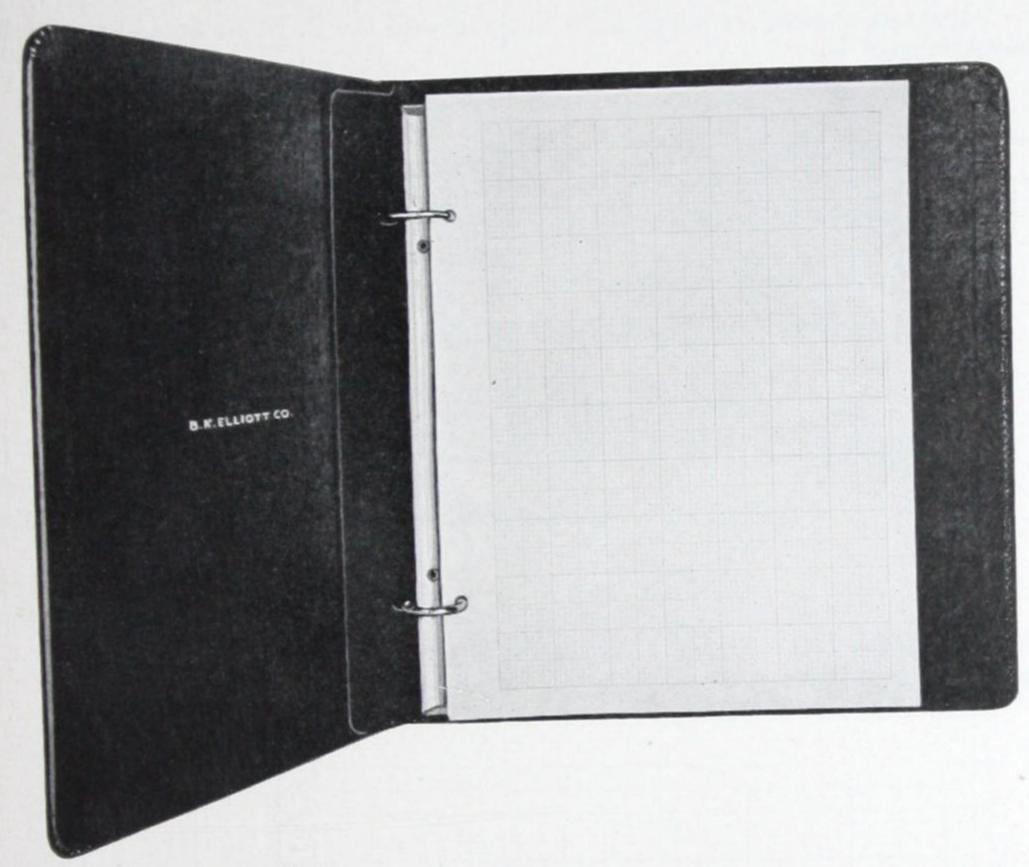
See Price List Inside Back Cover

PAGE 62 Junior





LOOSE LEAF BINDERS



70631

Loose Leaf Binders are a very satisfactory device for keeping Graph Sheets in order. Permits insertion or removal of individual sheets without removing or disarranging the others.

These Binders are made in two sizes to accommodate the $8\frac{1}{2}$ x 11 inch and 11 x $16\frac{1}{2}$ inch Graph Sheets listed on pages 64 to 70. Binder No. **70631** will take the larger sheets when folded.

Furnished with stiff covers, roundcornered, bound in full black levant grained imitation leather, cloth back lining and leatherette side linings. The one inch rings will hold comfortably about 200 sheets of thin paper or 100 sheets of heavy paper.

EACH

70631 Loose-Leaf Binder for sheets $8\frac{1}{2}$ x 11 inches, punched on the long edge. . 70632 Loose-Leaf Binder for sheets $11 \times 16\frac{1}{2}$ inches, punched on the short edge



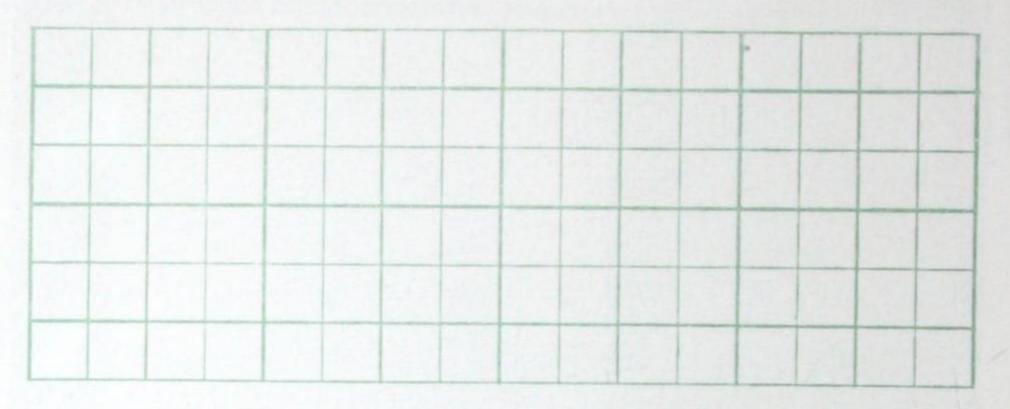
"PRECISE" ENGRAVED GRAPH SHEETS

TRADE HARR

These sheets are designed for graphic charts, statistics and similar purposes.

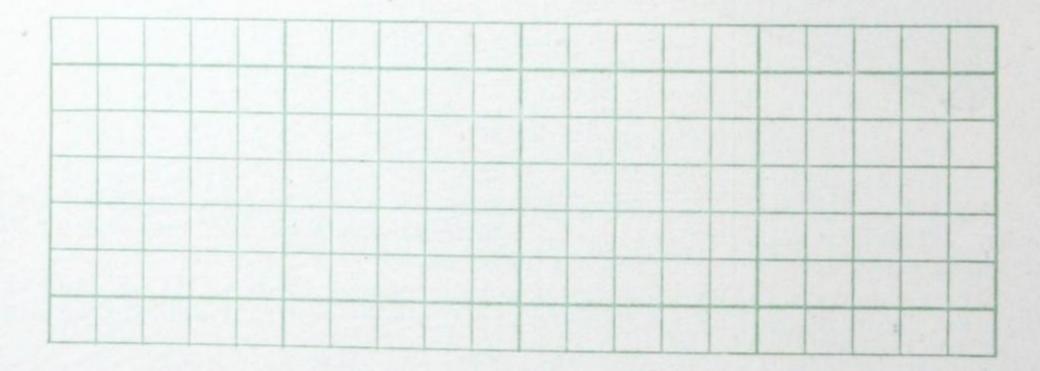
Sheets are carried in two kinds of paper: a strong white drawing paper of medium weight and a fairly thin weight of tracing paper of good strength and erasing quality, which "Blue Prints" easily.

All sheets marked for punch holes to tie in with the B. K. E. Loose-Leaf Binders shown on page 63.



4 x 4 to 1 inch 2nd line accented 4th line heavy

		SIZE OF SHEET	SIZE OF PLATE	100 Sheets	10 Sheets
70641	Drawing Paper, Green	8½ x 11	7 x 10		
	Tracing Paper, Green		7 x 10		
To	otal divisions: short way 28; long w	vay 40.			



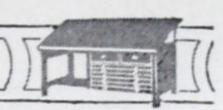
5 x 5 to 1 inch 5th line heavy

		SIZE OF SHEET	SIZE OF PLATE	100 Sheets	10 Sheets
70643	Drawing Paper, Green	8½ x 11	7 x 10		
70644	Tracing Paper, Green	8½ x 11			
T	otal divisions: short way 35; long w	av 50.			
70645	Drawing Paper, Green	11 x 161/2	10 x 15		
70646	Tracing Paper, Green	11 x 161/2			
T	otal divisions: short way 50; long w	ay 75			
70644 To 70645 70646	Tracing Paper, Green otal divisions: short way 35; long w Drawing Paper, Green Tracing Paper, Green otal divisions: short way 50; long w	8½ x 11 yay 50. 11 x 16½ 11 x 16½	7 x 10 10 x 15 10 x 15		

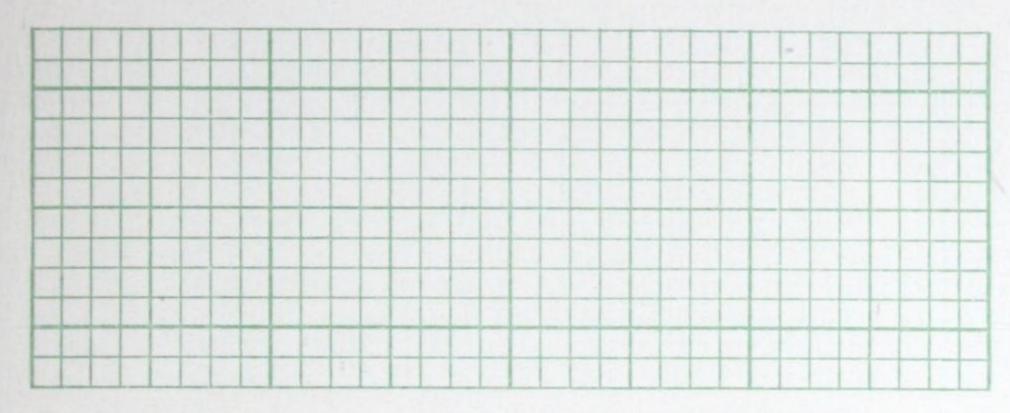
See Price List Inside Back Cover

Some Page 64 Johnson



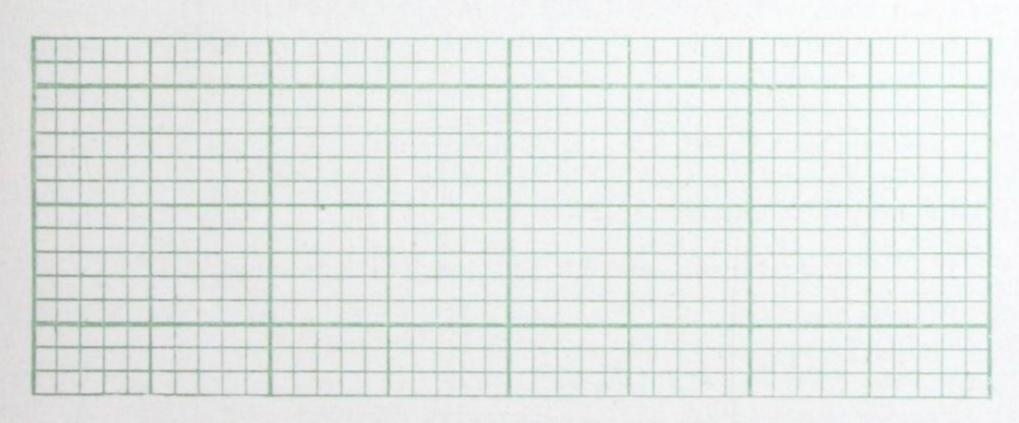


"PRECISE" ENGRAVED GRAPH SHEETS



8 x 8 to 1 inch 4th line accented 8th line heavy

		SIZE OF SHEET	SIZE OF PLATE	100 Sheets	10 Sheets
70651	Drawing Paper, Green	8½ x 11	7 x 10		
70652	Tracing Paper, Green	8½ x 11	7 x 10		
To	otal spaces: short way 56; long way	y 80.			
70653	Drawing Paper, Green	11 x 16½	10 x 15		
70654	Tracing Paper, Green	11 x 16½	10 x 15		
	Total spaces: short way 80; long	way 120			



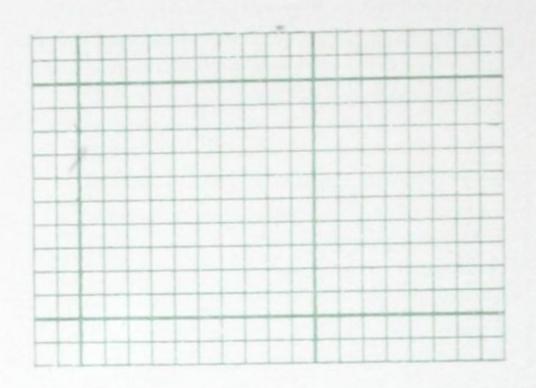
10 x 10 to 1 inch 5th line accented 10th line heavy

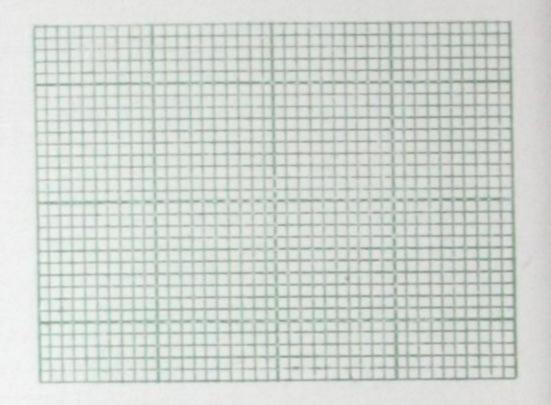
		SIZE OF SHEET	SIZE OF PLATE	100 Sheets	10 Sheets
70655	Drawing Paper, Green	8½ x 11	7 x 10		
70656	Tracing Paper, Green	8½ x 11	7 x 10		
To	otal spaces: short way 70; long way	100.			
70657	Drawing Paper, Green	11 x 16½	10 x 15		
70658	Tracing Paper, Green	11 x 16½	10 x 15		
To	otal spaces: short way 100; long wa	y 150.			





"PRECISE" ENGRAVED GRAPH SHEETS





10 x 10 to 1 inch 10th line heavy

20 x 20 to 1 inch 1/2" and 1" line heavy

10 :	x 10 to 1 inch 10th Line Heavy	SIZE OF SHEET	SIZE OF PLATE	100 Sheets	10 Sheets
706601	Drawing Paper, Green	8½ x 11	7 x 10		
706602	Tracing Paper, Green	8½ x 11	7 x 10		
Tot	al spaces: short way 70; long way	100.			
706603	Drawing Paper, Green	11 x 16½	10 x 15		
706604	Tracing Paper, Green	11 x 16½	10 x 15		
Tot	al spaces: short way 100; long wa	y 150.			

12 x 12 to 1 inch; 3rd, 6th, 9th and 12th lines accented.

706605	Drawing Paper, Green	8½ x 11	7½ x 10	100 Sheets	12 Sheets
706606	Tracing Paper, Green	8½ x 11	7½ x 10		
Tot	al spaces: short way 84; long way	120.			
706607	Drawing Paper, Green	11 x 161/2	10 x 15		
706608	Tracing Paper, Green	11 x 161/2	10 x 15		
Tot	al spaces: short way 120; long wa	y 180			

16 x 16 to 1 inch; 4th, 8th, 12th and 16th lines accented.

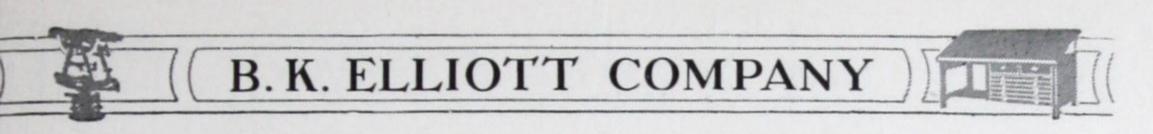
706609	Drawing Paper, Green 8½ x	11	7 x 10	100 Sheets	10 Sheets
706610	Tracing Paper, Green 8½ x	11	7 x 10		
Tot	al spaces: short way 112; long way 160				
706611	Drawing Paper, Green 11 x	161/2	10 x 15		
706612	Tracing Paper, Green 11 x	161/2	10 x 15		
Tot	tal spaces: short way 160; long way 240				

20 x 20 to 1 inch $\frac{1}{4}$ " line slightly accented $\frac{1}{2}$ " and 1" line heavy

706613	Drawing Paper, Green	8½ x 11	7½ x 10
	Tracing Paper, Green		7½ x 10
Tot	al spaces: short way 140; long wa	y 200.	
	Drawing Paper, Green		10 x 15
	Tracing Paper, Green		
	al spaces: short way 200; long wa		

See Price List Inside Back Cover

PAGE 66 Joseph



"PRECISE" ENGRAVED GRAPH SHEETS

TRADE MAR

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	1111111111							-
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	111111111	1111111		1111111			11111111	++
		1111111		+++++++	++++++			++
	111111					11011111		++
	++++++++			11111111		14811111		11
	1111111					110111111	11111111	
	++++++++++							-
	+++++++++					112111111		-
				-		-		++
++++++++	111111111			1111111			11111111	-
++++++++	11111111			+++++	1111111		1111111	-
							11111111	1
					1111111	11211111	11111111	11
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20 x 20 to inch 1/4" and 1/2" line slightly accented inch line heavy

SIZE OF

100 SHEETS

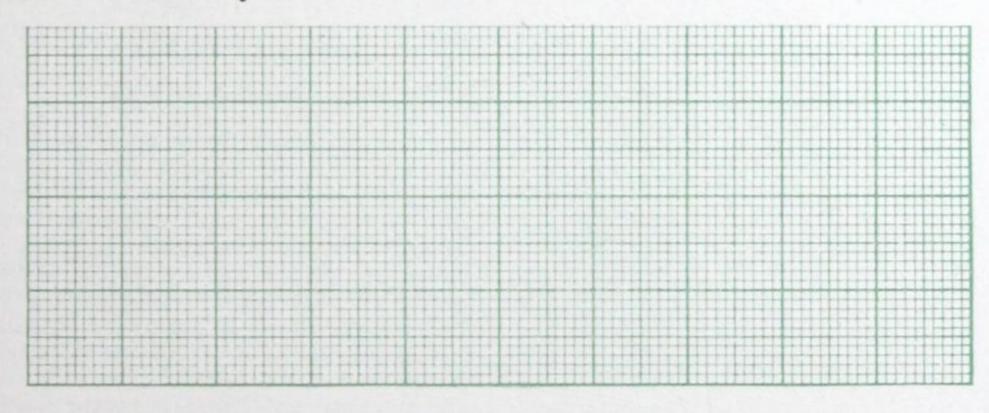
10 Sheets

70671 Drawing Paper, Green 8½ x 11 7½ x 10 70672 Tracing Paper, Green. 8½ x 11 7½ x 10 Total spaces: short way 140; long way 200. 70673 Drawing Paper, Green 11 x 16½ 10 x 15 70674 Tracing Paper, Green. 11 x 16½ 10 x 15 Total spaces: short way 200; long way 300.

SIZE OF

MILLIMETER

Sheets ruled according to the metric system. Divided both ways into millimeters. There are approximately 25 divisions to the inch on the millimeter sheet and the spacing is closest or finest of any of the cross-section sheets.

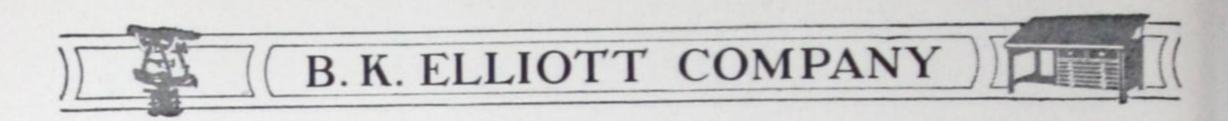


20 x 25 centimeters lightly accented lines at half-centimeter Every 10th millimeter or centimeter heavy

		SIZE OF SHEET	SIZE OF PLATE	100 Sheets	10 Sheets
70675	Drawing Paper, Green	8½ x 11	8 x 10		
	Tracing Paper, Green.		8 x 10		
	tal spaces: short way 20		ay 250.		
70677	Drawing Paper, Green	11 x 16½	10 x 15		
	Tracing Paper, Green.				
To	otal spaces: short way 2	50; long wa	ay 380.		

See Price List Inside Back Cover

Some Page 67 Johnson



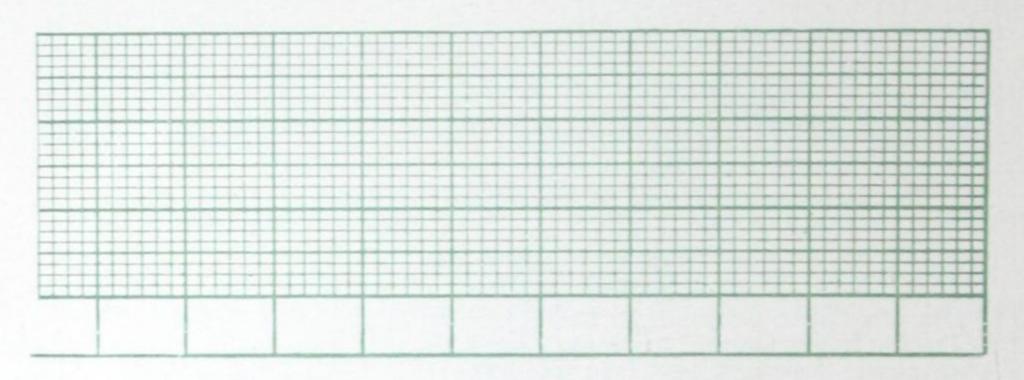
"PRECISE" ENGRAVED GRAPH SHEETS

DIFFERENT NUMBER OF DIVISIONS PER UNIT EACH WAY

(6 x 8 Divisions per Unit)

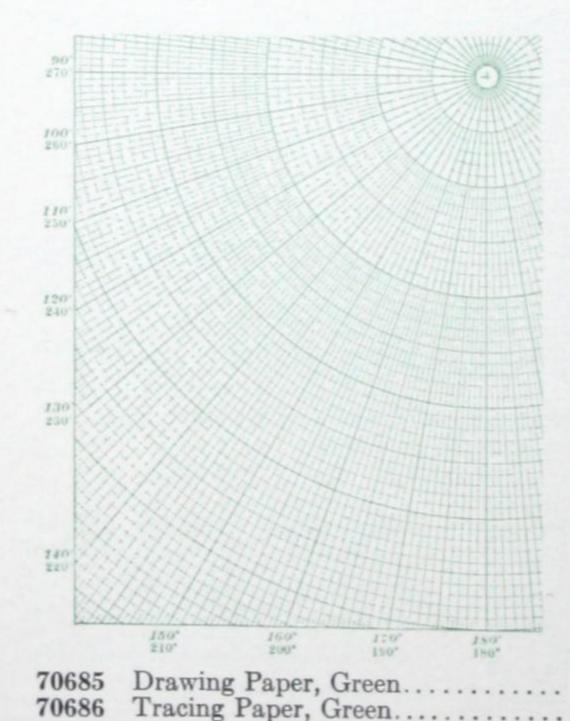
These sheets, divided into 8 spaces vertically per unit, are especially useful for recording prices of stocks and bonds daily or monthly. Can also be adapted to many other production records and progress charts.

This sheet covers 26 weeks by working days or 13 years by months. The long way has a range of 20 to 40 points by 8ths the short way.



Total divisions: short way 160; long way 156.

		SIZE OF SHEET	SIZE OF PLATE	100 Sheets	10 Sheets
$70682 \\ 70683$	Drawing Paper, Green Tracing Paper, Green Drawing Paper, Green Tracing Paper, Green	8½ x 11 11 x 16½	$7\frac{1}{2} \times 9\frac{3}{4}$ $9\frac{3}{4} \times 15$		



70686

POLAR COORDINATE CHART SHEET

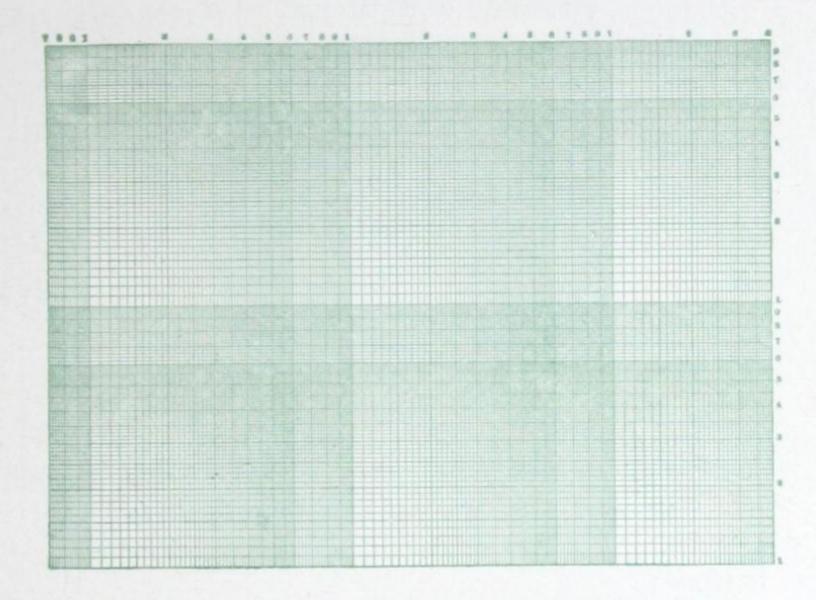
A chart sheet made up of concentric circles, 1/10th of an inch apart, divided into 360° and numbered at 10° intervals both clockwise and anti-clockwise. It is designed for plotting curves by polar coordinates. It can also be used to indicate hourly or part hourly variations, and if each degree line is taken as equivalent to 4 minutes time the complete circle will represent a full 24-hour day. Spherical and hemi-spherical candle power may be plotted on this sheet. Also serves as a paper protractor. For plotting stadia notes either in field or office, polar charts are admirably adapted and greatly speeds up the interpolation of contours and increases the accuracy of scaling.

80°	SIZE OF	SIZE OF	100	10
	SHEET	PLATE	Sheets	Sheets
	8½ x 11 8½ x 11	$7\frac{1}{2} \times 10$ $7\frac{1}{2} \times 10$		





"PRECISE" LOGARITHMIC CROSS SECTION PAPERS

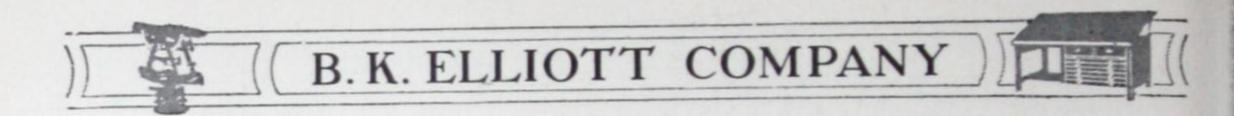


Logarithmic Scale both vertically and horizontally.

Sheet size $8\frac{1}{2}$ x 11 inches, ruled in green.

No. of	Log. Units	Size of Units	Per 100
706901	1 x 1		
706902	1 x 1		
706903	2 x 1½		
706904	2 x 11/3		
706905	2¾ x 2	3¾" cycles, Tracing Paper	
706906	2¾ x 2		
706907	3 x 2	3" cycles, Tracing Paper	
706908	3 x 2	3" cycles, Drawing Paper	
706909	5 x 3	2" cycles, Tracing Paper	
706910	5 x 3	2" cycles, Drawing Paper	
		Sheet Sizes 11 x 16½ inches	
706911	2 x 1½		
706912	2 x 1½		
706913	3 x 2		
706914	3 x 2		
706915	5 x 3	3" cycles, Tracing Paper	
706916	5 x 3	3" cycles, Drawing Paper	
		See Price List Inside Back Cover	

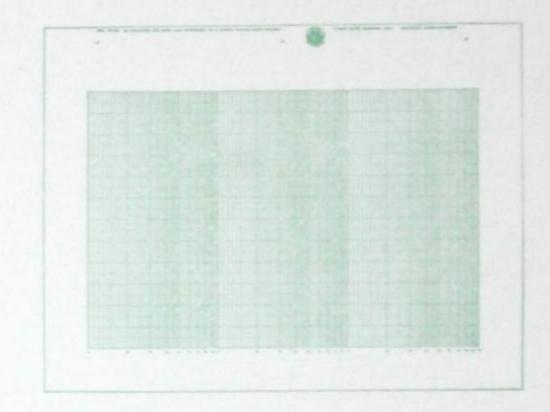
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"PRECISE" ENGRAVED GRAPH SHEETS

RADE MARK

SEMI-LOGARITHMIC



Logarithmic scale long way of sheet; 20 per inch the short way

Sheet Size 81/2 x 11 inches - Ruled in Green

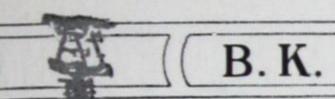
NUMBER	R AND SIZE OF LOG. UNITS	PER 100
707001	3 - 3" cycles, Tracing Paper	
707002	3 – 3" cycles, Drawing Paper	
707003	4 - 2-1/4" cycles, Tracing Paper	
707004	4 - 2-1/4" cycles, Drawing Paper	
707006	5 - 1-4" cycles, Drawing Paper	

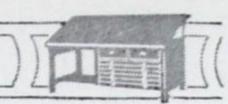


Logarithmic scale short way of sheet; 20 per inch long way

Sheet Size 11 x 161/2 inches - Ruled in Green

707007 1 - 9" cycle, Tracing Paper.
707008 1 - 9" cycle, Drawing Paper.
707009 2 - 4½" cycles, Tracing Paper.
707010 2 - 4½" cycles, Drawing Paper.
707011 3 - 3" cycles, Tracing Paper.
707012 3 - 3" cycles, Drawing Paper.



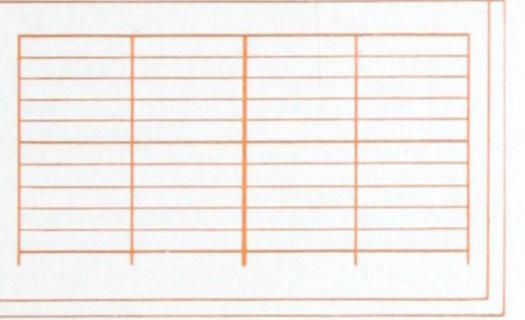


FEDERAL AID SHEETS

U. S. Department of Agriculture
Public Roads Administration
Federal Works Agency

UPPER HALF PLAIN

SECTION OF DIVISION COVERING LOWER HALF OF SHEET



PLAN-PROFILE

Plate 1—2x10 to one inch, Half Ruled Sheet Size 23" x 36"—Engraving 10" x 33½" Printed in Orange. Two Title Blocks.

PER SHEET 25 SHEETS 100 SHEETS

70711 Plate 1, on Bond Tracing Paper.......
70712 Plate 1, on No. 70212 Ellco-Vel Tracing Paper

70713 Plate 1, on Imperial* Tracing Cloth....

DOUBLE PLAN-PROFILE

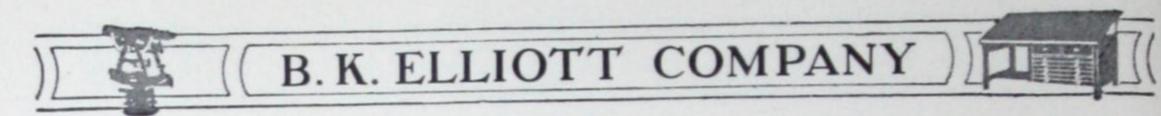
Plate 2—2x10 to one inch.
Two Profiles—5" x 33½" each.
Two Plan Spaces—5¼" x 33½" each.
Sheet Size 23" x 36". Printed in Orange
Two Title Blocks

Per Sheet 25 Sheets 100 Sheets

*Note: Any of the above furnished on Arkwright or Prudence Tracing Cloth on special order.

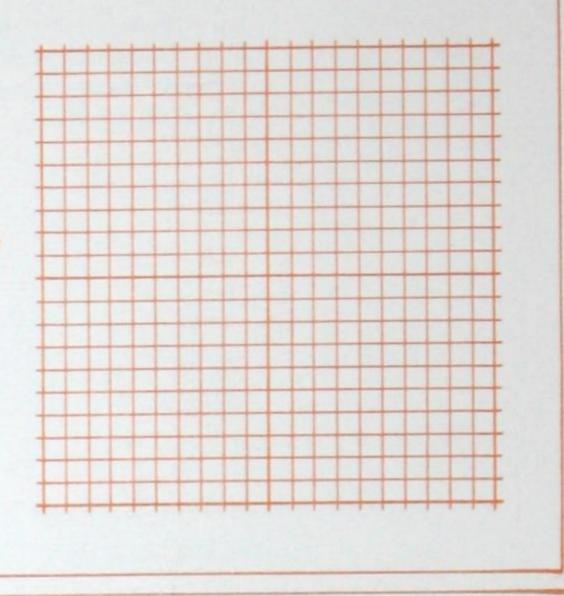
See Price List Inside Back Cover

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FEDERAL AID SHEETS (Continued)

SECTION OF DIVISION COVERING ENTIRE SHEET EXCEPT STANDARD MARGINS



CROSS SECTION

Plate 3-10x10 to one inch, Full Ruled

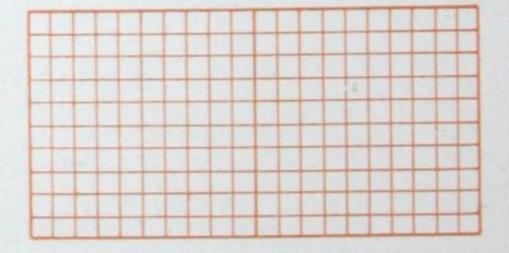
Sheet Size 23" x 36". Engraving 21" x 331/2". Printed in Orange. Two Title Blocks. PER SHEET 25 SHEETS 100 SHEETS

70721 Plate 3, on Bond Tracing Paper

70722 Plate 3, on No. 70212 Ellco-Vel Tracing Paper

UPPER HALF PLAIN

SECTION OF DIVISION COVERING LOWER HALF OF SHEET



25 SHEETS

PER SHEET

100 SHEETS

PLAN-CROSS SECTION

Plate 4—10x10 to one inch, Half Ruled.

Sheet Size 23" x 36". Engraving 10" x 331/2". Printed in Orange. Two Title Blocks.

70724 Plate 4, on Bond Tracing Paper

70725 Plate 4, on No. 70212 Ellco-Vel Tracing Paper

70726 Plate 4, on Imperial* Tracing Cloth..... *Note: Any of the above furnished on Arkwright or Prudence Tracing Cloth on special order.

See Price List Inside Back Cover

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PADS OF CROSS SECTION PAPER

Reasonable in Cost—Accurate in Divisions
Uniform in Color—Most Suitable for
Technical Sketching

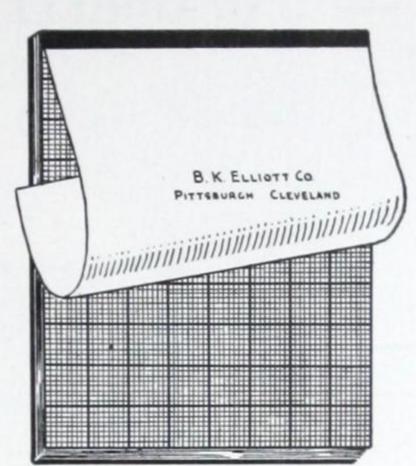
PER PAD

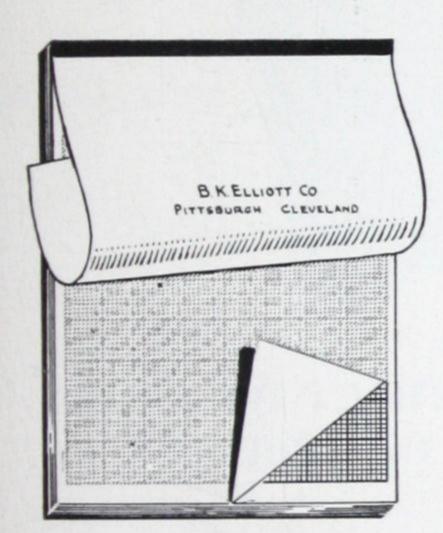
70731	8	x 10) inch,	10	X	10	to	one	inch,
		rule	d in blu	ie, 2	4 8	shee	ts.		

732 8 x 10 inch, 8 x 8 to one inch, ruled in blue, 24 sheets.....

70733 8½ x 11 inch, 4 x 4 to one inch, ruled in blue, 100 sheets.....

70734 8½ x 11 inch, 4 x 4 to one inch, ruled in blue on Federal Tracing Paper, 50 sheets.....





TRANSPARENT TRACING PAPER PAD

A very fine sketching pad made up of a thin, strong, very transparent tracing paper, from which excellent blue prints can be made.

Each pad contains a very fine engraved cross section slip sheet of good heavy stock paper engraved on one side to 8 x 8 divisions, other side 10 x 10 divisions to the inch, the inch lines are heavy.

70735 Sketch Pad 8½" x 11"—50 sheets with slip sheet....Per Pad Per Doz. Pads

TRIPLEX NON-SLIP DRAFTING BLOCKS

100 sheets fine tracing paper, padded and perforated.

Triplex Drafting Block, sheet size $8\frac{1}{2} \times 10$ inches. Plate size 8×10 inches. Plates ruled inches, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ size and 10ths. Isometric $\frac{1}{8}$ inch scale.

SINGLE CARTON CARTON OF 6 OF 12

70736

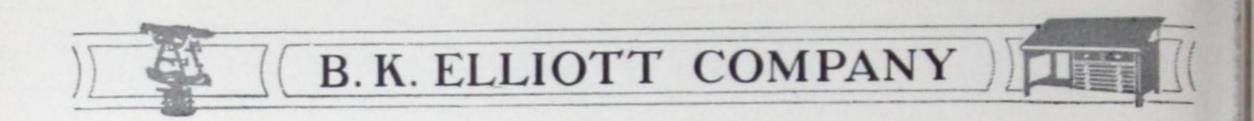
Triplex Drafting Block, sheet size $8\frac{1}{2}$ x 18 inches. Plate size 8 x 14 inches. Plates ruled inches, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$ size and 10ths. Isometric $\frac{1}{8}$ inch scale.

70737 SINGLE CARTON CARTON OF 12

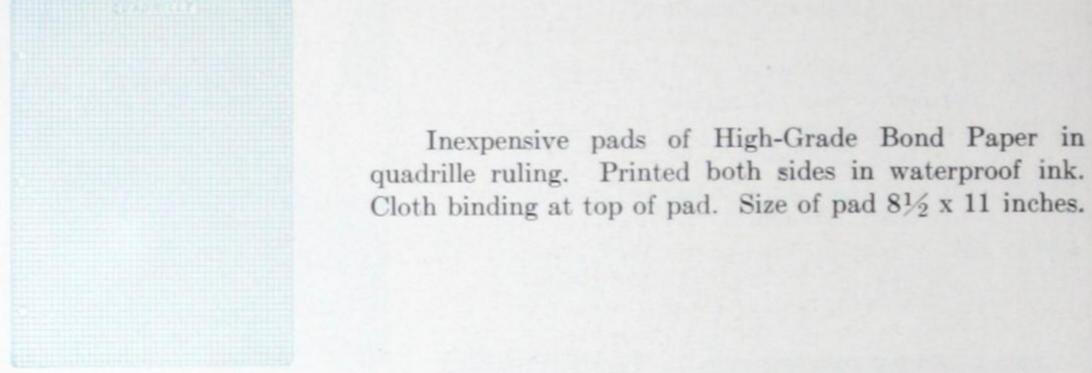
100 SHEETS
HIGHLY TRANSPARENT
TRACING PAPER

DIRECTIONS

OPEN ALL SCALES LAY
SHEET OF TRACING PAPER
BACK OVER COVER, FOLD
SCALES BACK SO SCALE TO
BE USED IS UPPERMOST
COVER WITH EXTENDED
SHEET OF TRACING PAPER.



QUADRILLE RULED PAPER IN PADS



		Еасн	Doz
70741	Quadrille Pad, 50 sheets, 4 x 4 to inch		
70742	Quadrille Pad, 50 sheets, 5 x 5 to inch		
70743	Quadrille Pad, 50 sheets, 8 x 8 to inch		
70744	Quadrille Pad, 50 sheets, 10 x 10 to inch		

STANDARD AND OTHER CONTRACT DOCUMENTS AMERICAN INSTITUTE OF ARCHITECTS

70745	EACH
Agreement and General Conditions in cover	
General Conditions without Agreement(A2)	
Agreement without General Conditions(A1)	
Standard Form of Bond(B1)	
Form of Subcontract(C1)	
Letter of Acceptance of Subcontractor's Proposal(D1)	
Cover (heavy paper with valuable notes)(E1)	
Complete Set of Above Forms, in cover	
A. I. A. Short Form for Small Construction Contracts	
Form of Agreement between Owner and Architect on the Percentage Basis	
Form of Agreement between Owner and Architect on the Fee Plus Cost System	
Circular of Information on Fee Plus Cost System (Owner-Architect)	
Form of Agreement between Owner and Contractor (Cost Plus Fee Basis)	
Circular of Information on Cost Plus Fee System (Owner-Contractor)	
Building Agreement Between Contractor and Owner(691)	+-

70746 Architects Certificate Book, 100 blanks, good quality paper. A standard certificate book for Architects and Contractors.....

See Price List Inside Back Cover

Doz.

EACH





ENGINEERS' LOOSE LEAF FIELD BOOKS



Our Engineers' Loose Leaf Field Books are designed to meet the requirements of engineers working in the field, enabling them to send any of their notes to the office daily or weekly, and at the same time to continue using the books. They also permit of filing the notes of any particular survey together, and of filing notes of each survey in alphabetical order according to the names of clients.

The covers, $4\frac{3}{4}$ x $7\frac{1}{2}$ inches, are of fifty leaf capacity, have round corners, and are furnished in Black Morocco. The improved mechanism is very light and strong, composed of a narrow metal back with six rings, so arranged that they can be opened by one operation, permitting the leaves to be inserted or removed rapidly. When the book is open the leaves lie perfectly flat, and as the covers are very stiff the book can be held firmly and notes quickly entered and sketches rapidly made. The leaves are of the same high grade paper, with waterproof rulings, as furnished in our regular Engineers' Field Books.

70751	Loose-Leaf Cover only, Black Morocco binding	CACH	PER DOZEN
70752	Loose Leaves, No. 70751 ruling, 50 leaves in set	SET	PER DOZEN
70753	Loose Leaves, No. 70774 ruling, 50 leaves in set	SET	PER DOZEN
70754	Loose Leaves, No. 70793 ruling, 50 leaves in set	SET	PER DOZEN
70755	Transfer Binder for loose leaves	EACH	PER DOZEN

See Price List Inside Back Cover

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ENGINEERS

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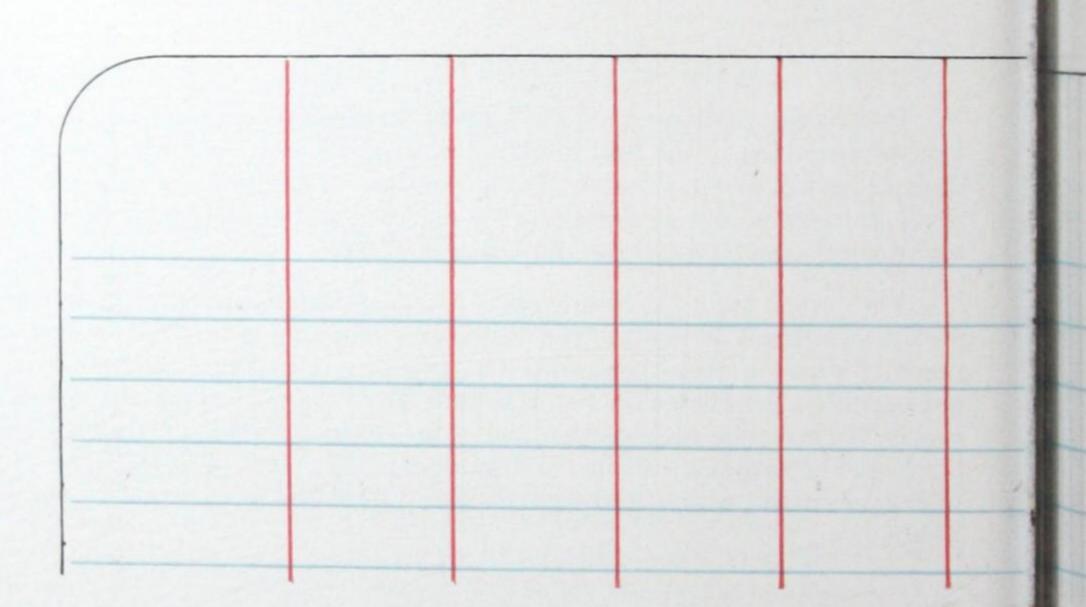
De

The B. K. Elliott Co. field books are designed and made up to give the best service possible under all conditions. The materials and workmanship used are the best obtainable.

The Rulings and spacings in the various volumes were selected only after careful study and from advice given by many of our Engineering friends.

The tables and information inserted in some of the Volumes are of necessity on account of space condensed and confined as nearly as possible to information most helpful in the field.

Binding—Field books are covered with water proof binding—bound with a strong cord stitching having a strong gummed cloth tape back bone—and will not tear from the tough cover board. The back is flexible and book will lay flat when open. Covers may be folded back to back without injury to book and used as a stiff support when making notes in the field.

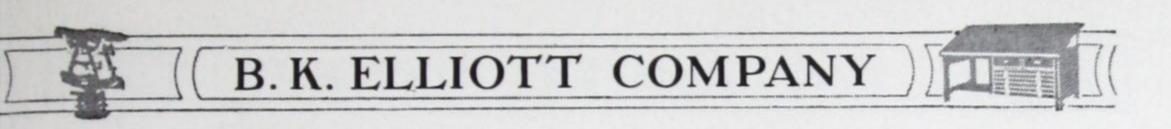


70761 Elliott's 740 Field Book, $4\frac{1}{2}$ " x $7\frac{1}{2}$ ", 80 Leaves, Smooth Pape 70762 Elliott's 741 Field Book, $4\frac{1}{2}$ " x $7\frac{1}{2}$ ", 60 Leaves, Smooth Pape

Field Books of Special Size or Design in Lo

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ELD BOOKS

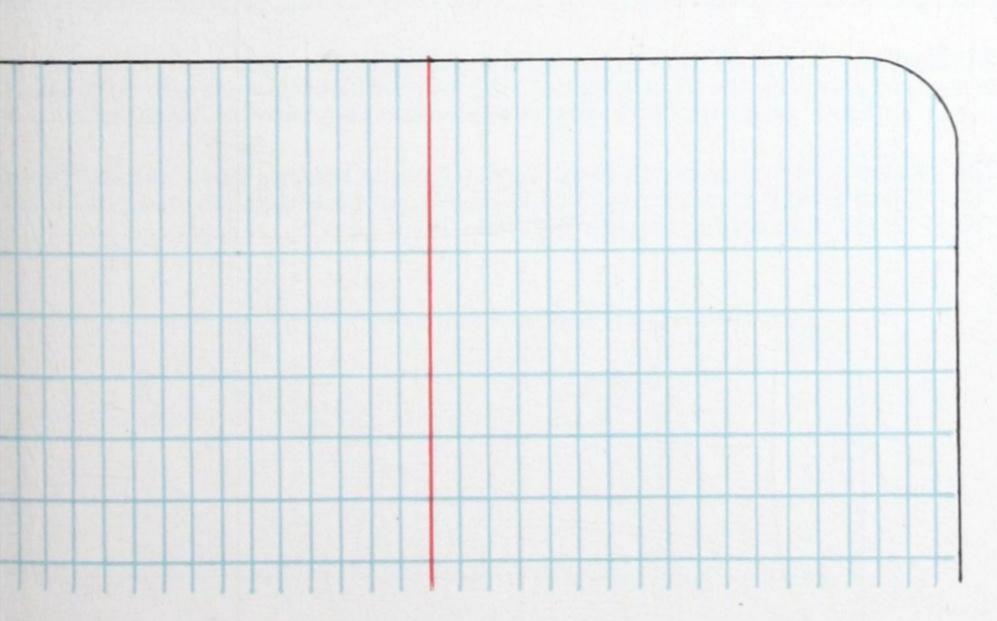
Paper—The leaves are of a good quality paper with waterproof surface having excellent erasing qualities.

Engraving—Is made from plates to insure accuracy in spacing and clearness of lines. The inks used are a fine quality of water proof ink that will not rub off or blur if touched with wet fingers.

Tables—We have inserted tables in the Transit Books, which we believe will be the most help in the field as follows—

Excavations and Embankments;

Trigonometric Formulae; Inches in decimals of a foot; Useful Relations Table; Stadia Reduction Formulae; Curve Formulae for Simple Curves; Natural Trigonometric Functions (Sine, Tangent, Cosine, Cotangent) for every 10' of arc; Rods in Feet and Inches; Links in Feet and Inches; Tangents and Externals to a 1° curve; Middle Ordinates of Rails; Short Radius Curves; Slope Reduction Table; Minutes in Decimals of a Degree.



	Dozen	Еасн
Tables		

Six Dozen or More Made to Order



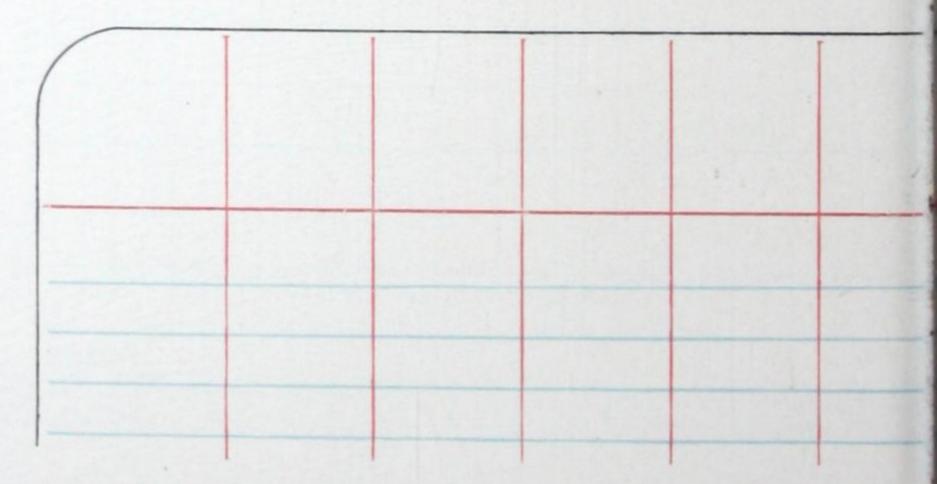


ENGINEERS

2	2		воок	No	

Our Duplicating Field Book was made to fill a demand from engineers in the field where it is necessary to keep the office supplied with notes while the work is in progress. The engineer also has a copy, which is very convenient. They can be furnished with

70781 Elliott's 742 Duplicating Field Book, Genuine Leather Cover, 4½ x 7¾ inche Elliott's 742P Duplicating Field Book, Genuine Leather Cover, 4½ x 7¾ inche 70783 (742½) Binders for Duplicating Field Book Leaves....



Flliott's 743 Level Book, 4 x 6½ inches, 80 leaves, smooth paper, with tables. Elliott's 744 Level Book, 4 x 6½ inches, 60 leaves, smooth paper, with tables.

Special Transit or Level Books, Mad





ELD BOOKS

BOOK No	2

either the original leaf perforated and duplicate leaf fast, or the duplicate leaf perforated and the original leaf fast.
Office Record Block is printed on reverse of original leaf.

DOZEN Елсн leaves, Original Leaf perforated, with tables..... leaves, Duplicate Leaf perforated, with tables.....

DOZEN

EACH

Order in Lots of Six Dozen or More

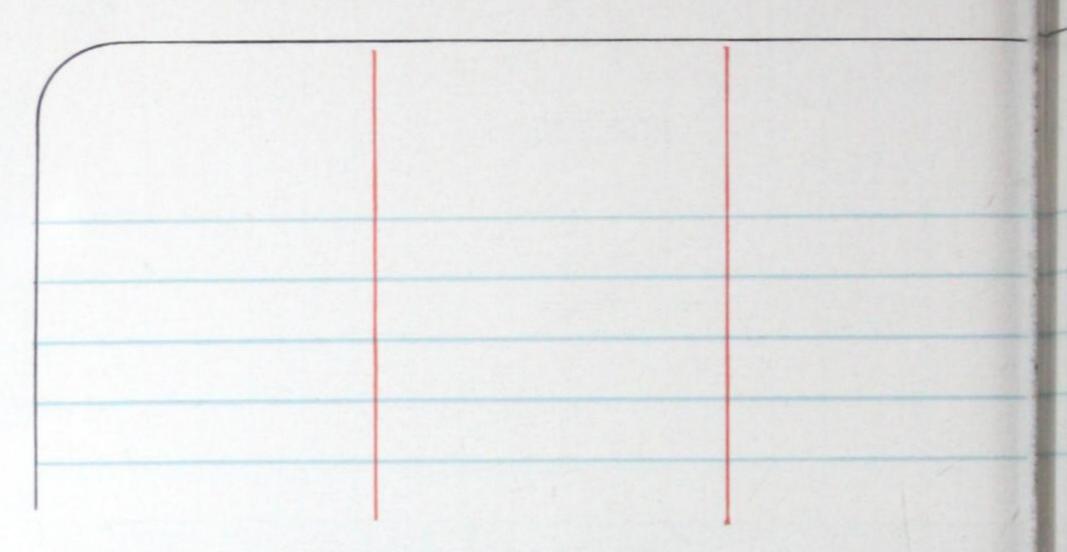
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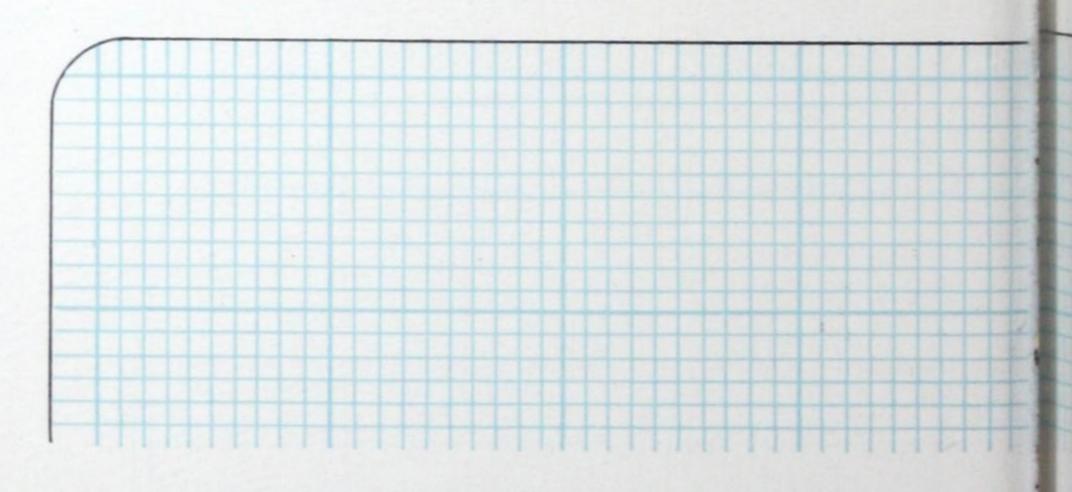




ENGINEER



Elliott's 746 Transit Book, 4½ x 7½ inches, 80 Leaves, smooth paper, witl



Elliott's 750 Cross Section Book, $4\frac{1}{2} \times 7\frac{1}{2}$ inches, 10 x 10 to inch, 80 Leaves Elliott's 751 Cross Section Book, 7 x $8\frac{1}{4}$ inches, 10 x 10 to inch, 80 Leaves 70802 70803

Any Other Style of Field or Cross Section Books

See Price List Inside Back Cover

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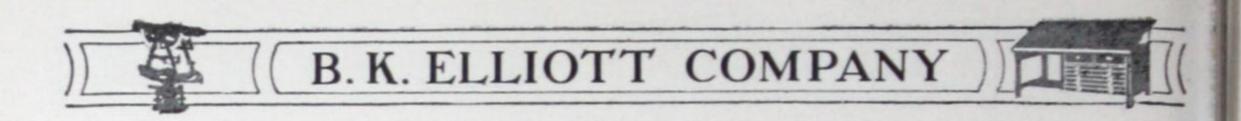
DOZEN EACH

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le to Order in Lots of Six Dozen or More

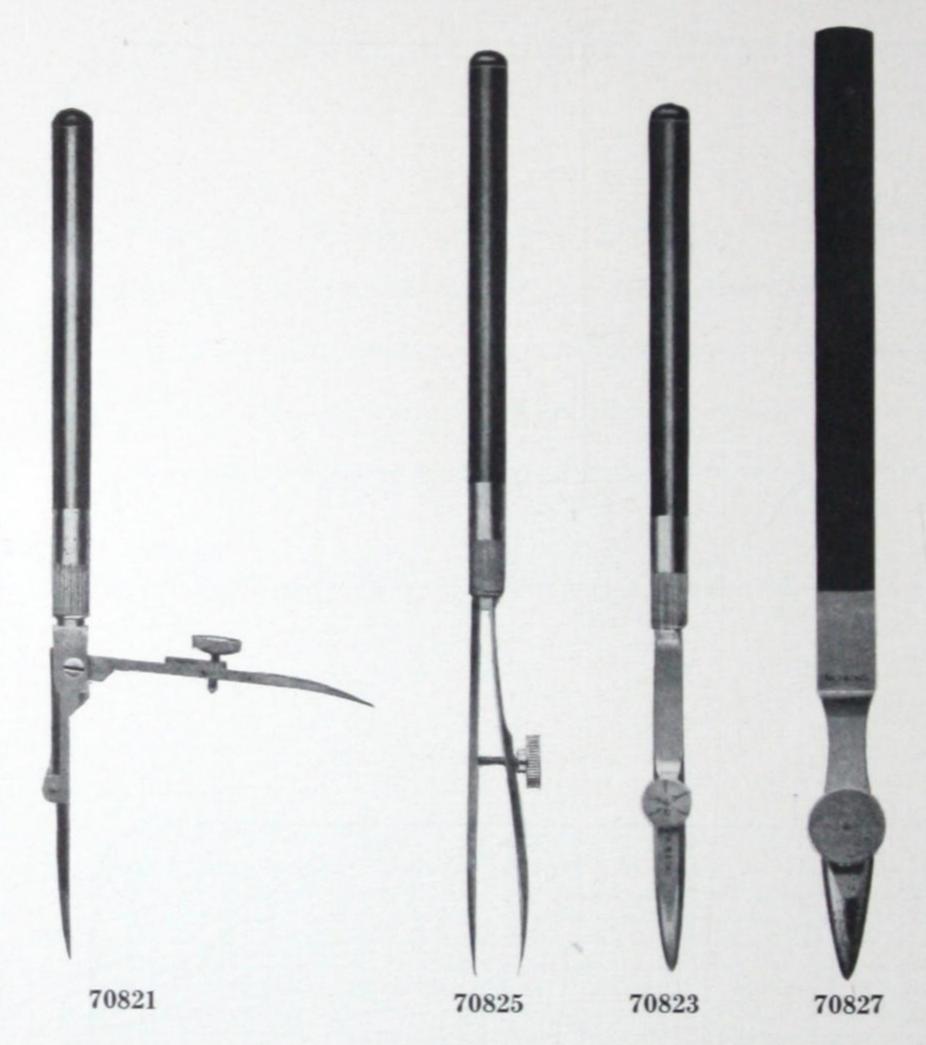
See Price List Inside Back Cover

MONO PAGE 81 JOHNS



ALTENEDER RULING PENS

Each Pen Stamped "TA"



	Еасн
70821 (1602½)	5-inch Stainless Steel Spring Hinge Ruling Pen
70822 (1604½)	5½-inch Stainless Steel Spring Hinge Ruling Pen
70823 (1614)	5-inch Spring Blade Ruling Pen
70824 (1614½)	5-inch Stainless Steel Spring Blade Ruling Pen
70825 (1615)	5½-inch Spring Blade Ruling Pen
70826 (1615½)	5½-inch Stainless Steel Spring Blade Ruling Pen
70827 (1632½)	6-inch Stainless Steel Wide Blade Ruling Pen, Ebony Handle.
70828 (1632½A)	6-inch Stainless Steel Wide Blade Ruling Pen, Aluminum Handle

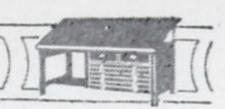
70829GS Graduated Screw will be furnished with any of above pens at additional cost. See Illustration 70823.

See Price List Inside Back Cover

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型

B. K. ELLIOTT COMPANY



ALTENEDER

CONTOUR PENS

RAILROAD PENS
AND PENCILS

PRICKERS



		Еасн
70831	$(1645\frac{1}{2})$	43/4-inch Contour Pen, tubular metal handle
70832	(1646)	51/4-inch Double Contour Pen, tubular metal handle
70833	$(1625\frac{1}{2})$	5-inch Railroad Pen, center adjusting, Stainless Steel
70834	$(1626\frac{1}{2})$	5-inch Railroad Pencil, center adjusting, Stainless Steel
70835	(1653)	41/4-inch Pricker, removable needle point
70836	(1658)	4½-inch Pricker, removable needle point, threaded.





EACH

ALTENEDER SIDE ADJUSTING BOW INSTRUMENTS







708401 (1530) 3¼-inch Bow Divider 708402 (1531½) 3¼-inch Bow Divider, with two removable needle points, stainless steel. 708403 (1532) 3¼-inch Bow Pencil. 708404 (1532½) Above made of stainless steel. 708405 (1534½) 3¼-inch Bow Pen, spring-hinge pen, stainless steel. 708406 (1535) 3¼-inch Bow Pen, spring-blade pen.		708401	708403	708406	
708404 (1532½) Above made of stainless steel	708402	531½) 3¼-inch Bow	Divider, with two removable needle	points, stainless steel	
708406 (1535) 31/4-inch Bow Pen, spring-blade pen	708404	532½) Above made of	of stainless steel		
708407 (1535½) Above made of stainless steel	$708406 \\ 708407$	535) 3¼-inch Bow 535½) Above made o	Pen, spring-blade pen of stainless steel		

CENTER ADJUSTING BOW INSTRUMENTS





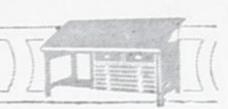


7084	9	708411	708414	EA
708409 (1580) 708410 (1581½) 708411 (1582) 708412 (1582½) 708413 (1584½) 708414 (1585) 708415 (1585½) 708416 (1588)	3¼-inch Bow Divider, removal, inch Bow Pencil	nge pen, stainless steel	nless steel	
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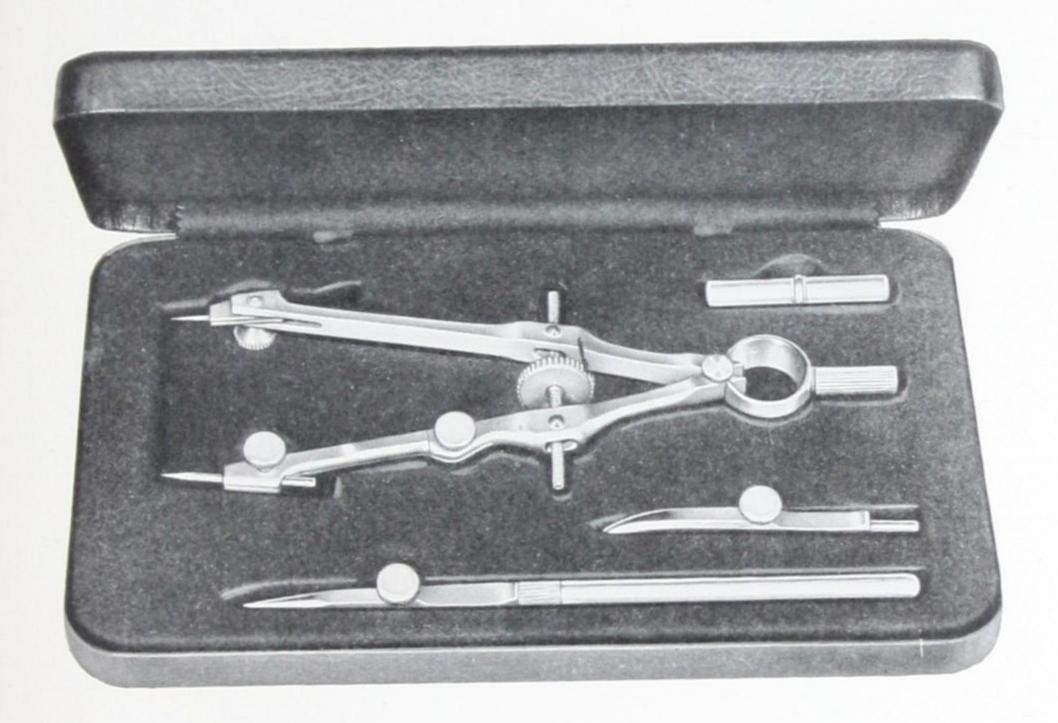




6-INCH CENTRE ADJUSTING BOW INSTRUMENT

LIGHT AND RIGID

Range: Approximately 1/16" - 91/2"



EACH 6-inch Centre Adjusting Bow Pen and Pencil, hardened steel 70851 (615) pencil part and Stainless Steel Spring Blade Pen, furnished in lined cardboard box with lead case..... The above instrument with Stainless Steel Spring-Hinge Pen. 70852 (615 SH) No. 70851 minus pen part..... 70853 (616) Bow Pen and Pencil and 5-inch Stainless Steel ruling pen. 70854 (618) Furnished with divider needle points in lined metal case with lead case..... The above with Spring-Hinge Stainless Steel pens..... **70855** (618 SH) A Condensed Set Valuable to Student or Professional Draftsman

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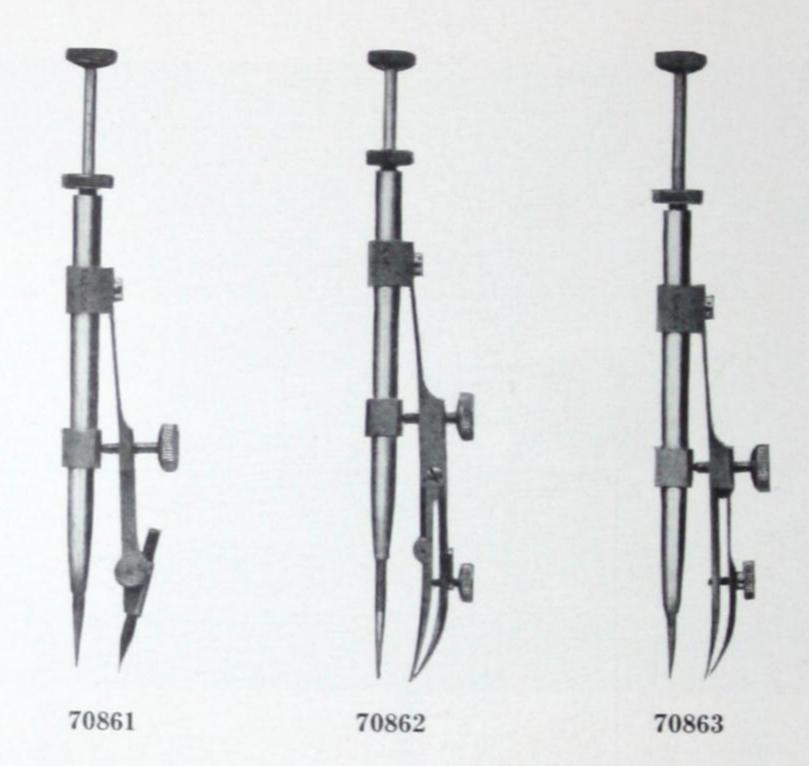


70876

70877

70878

ALTENEDER DROP SPRING BOW INSTRUMENTS



EACH 70861 (1572½) 4-inch Drop Spring Bow Pencil, Stainless Steel..... 70862 (1574½) 4-inch Drop Spring Bow Pen, Spring Hinge Pen, Stainless Steel 4-inch Drop Spring Bow Pen, Spring Blade Pen, Stainless 70863 (15751/2) Steel 70864 (1578) Morocco-covered Case for One Bow..... 70865 (1579) Morocco-covered Case for Two Bows..... 70866 (1576) 4-inch Drop Spring Bow Pen and Pencil, Spring Blade Pen.....

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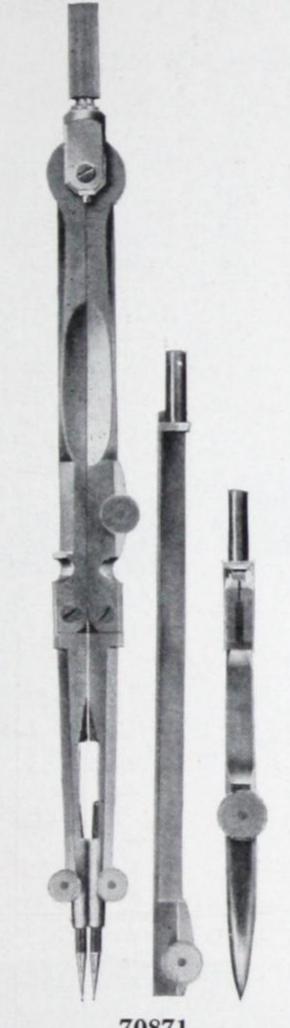
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EACH

ALTENEDER COMPASSES AND DIVIDERS



70871



SPRING
HINGE
PEN

0876 (1434)

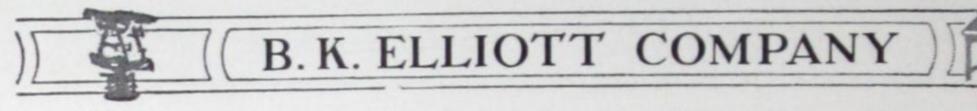
0877 (1434½)

0878 (1434½ SH)

70871	(1404)	pass	Pen and Per with lengthen needle-point	ning bar,
70872	(1404½)		with Stainle	
70873	(1404½	Stainle	ve Compa ess Steel Spr	ing Hinge
70874	(1423)	$5\frac{3}{4}$ -inch	Hair-spring	Divider.
70875	(1423)	$5\frac{3}{4}$ -inch	Hair-spring	Divider.
Same as 70871 Co	ompass bu	it with hair	-spring adju	stment
Same as 70876 w	rith Stain	less Steel Pe	en	
Same as 70876 w	ith Spring	-hinge Stai	nless Steel	Pen

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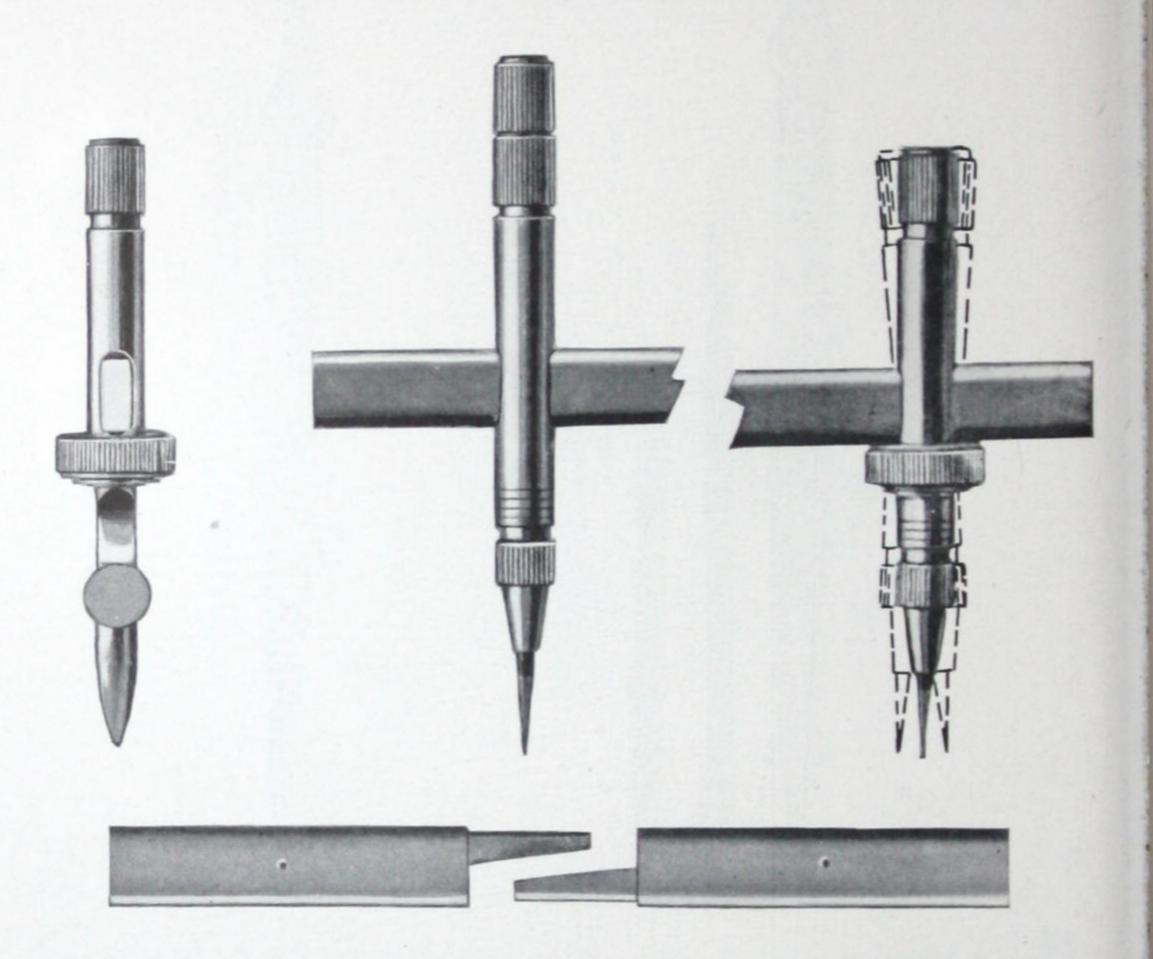




ALTENEDER IMPROVED TUBULAR BEAM COMPASS

Patent 2,385,723, dated 9-25-45

All Stainless Instrument Designed for Fastidious Draftsmen



70881

EACH

70891 (1

70892 (1

70893 ()

70894 (1

70895 (1

70881 Tubular Beam Compass, one 3" bar and two 8" bars fitted with taper slip-joint, furnished in case....

The outstanding feature of this Beam Compass is a cam operation for fine adjustment instead of the micrometer screw. This development requires fewer parts, eliminates the use of screw threads and is positive in action. The maximum adjustment is \frac{3}{16}" which is obtained in a single operation. Our standard hardened steel pencil chuck is used on the needle point and pencil legs and the high carbon stainless pen assures unlimited life for the instrument. The three vertical members are held in position by spring tension which can be regulated by turning knurled nut at top. They can also be locked in position if desired. This instrument is light but exceptionally rigid and will be found useful for small work as well as large. Special length bars can be furnished to order.

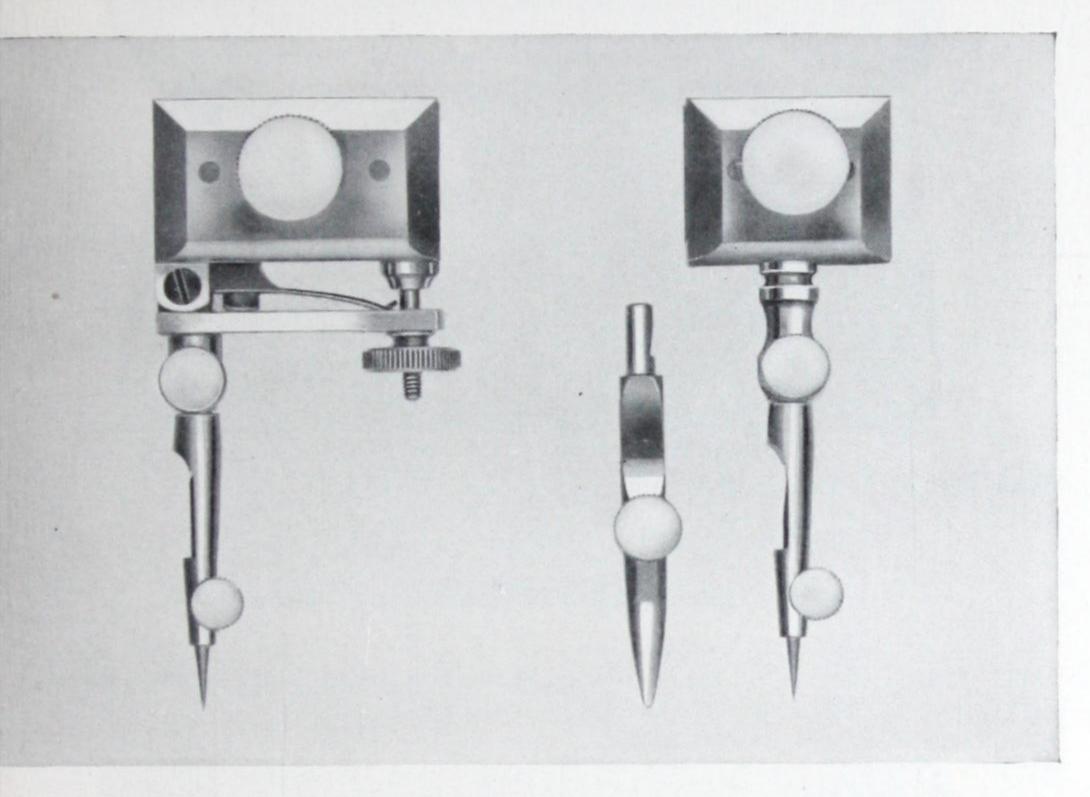
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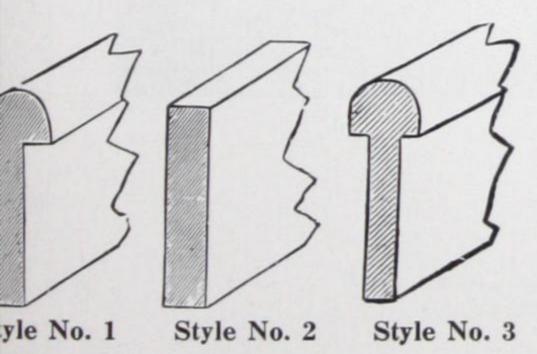
ALTENEDER BEAM COMPASSES



70891

EACH

891	(1672)	Beam Compass with interchangeable pen, pencil, and needle- point legs with micrometer adjustment
892	$(1672~\mathrm{SH})$	Beam Compass as above with spring-hinge pen
893	(1674)	Beam Compass 70891 with two divider points
894	(1674 SH)	Beam Compass as above with spring-hinge pen
895	(1675)	Wheel Attachment



70896

BARS FOR BEAM COMPASSES

70896 Bars for Beam Compasses made of hard-wood, Style Nos. 1, 2 or 3.

Size, inches 24 30 36 42 48 60

Each....1
2
3

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ALTENEDER DRAWING INSTRUMENTS



70901 (2040) 1666 Beam Compass 1531½ Bow Divider 1532½ Bow Pencil 1535½ Bow Pen 1614½ Ruling Pen

EACH

70911 (2

70912 (2)

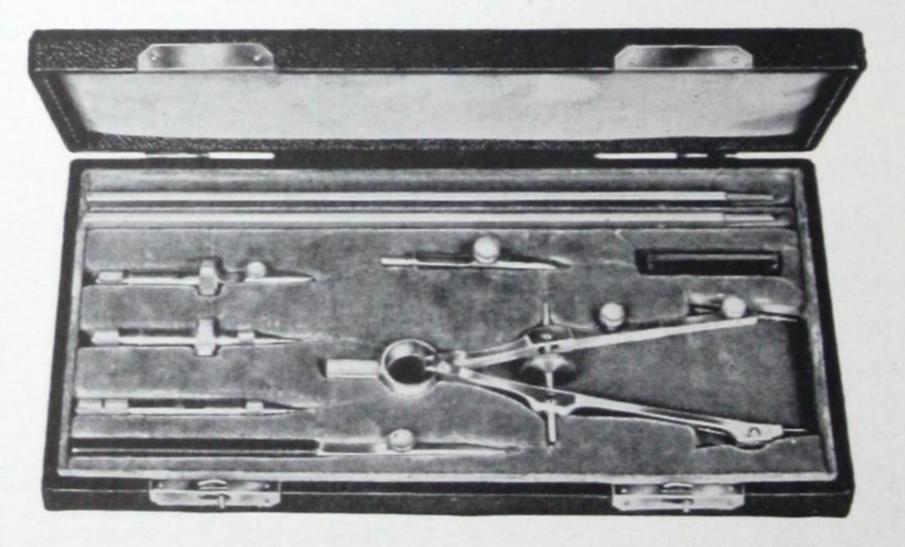
70913 (2)

70914 (2)

70915 (20

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70917 (20

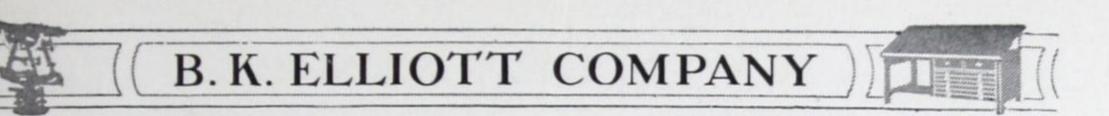


EACH

70904 Nos. 2040, 2042, 2045, 2050, and 2054.
70905 Nos. 2066 and 2070.
70906 Nos. 2084½ and 2087½.
Cases for special sets made to order.

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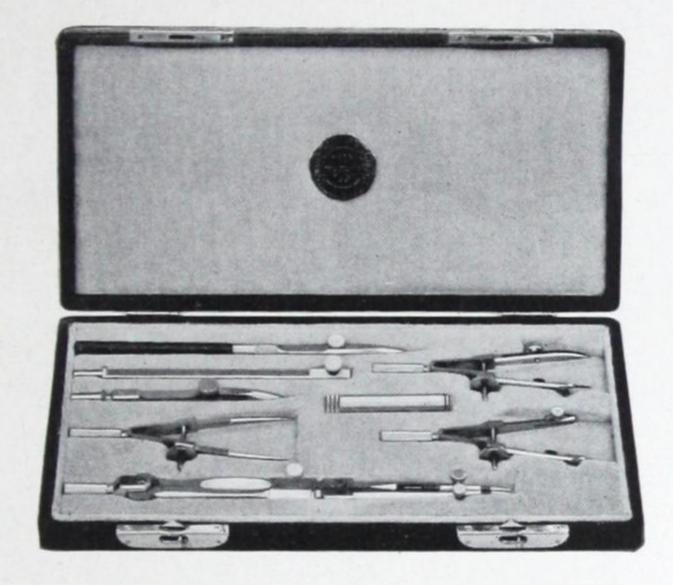
Some Page 90 Josepa



ALTENEDER DRAWING INSTRUMENTS

SETS WITH SIDE ADJUSTING BOWS

Specify whether Morocco Covered or Folding Pocket Case is desired



911	(2050)	1404, 6½-inch Pen and Pencil Compass with Bar 1530, 3½-inch Side Adjusting Bow Divider 1532, 3½-inch Side Adjusting Bow Pencil 1535, 3½-inch Side Adjusting Bow Pen 1614, 5-inch Spring Blade Ruling Pen EACH Morocco Covered or Folding Pocket Case with Lead Case.
912	$(2050\frac{1}{2})$	Above with Stainless Steel Pens
913	$(2050\frac{1}{2} \text{ SH})$	Above with Stainless Steel Spring-hinge Pens
914	(2066)	1404, 6½-inch Pen and Pencil Compass with Bar 1423, 5¾-inch Hair-spring Divider 1530, 3¼-inch Side Adjusting Bow Divider 1532, 3¼-inch Side Adjusting Bow Pencil 1535, 3¼-inch Side Adjusting Bow Pen 1614, 5-inch Spring Blade Ruling Pen 1615, 5½-inch Spring Blade Ruling Pen Morocco Covered or Folding Pocket Case with Lead Case
915	$(2066\frac{1}{2})$	Above with Stainless Steel Pens
916	$(2066\frac{1}{2} \text{ SH})$	Above with Stainless Steel Spring-hinge Pens
917	(2084½)	1404½, 6¼-inch Pen and Pencil Compass with Bar 1423, 5¾-inch Hair-spring Divider 1531½, 3¼-inch Side Adjusting Bow Divider 1532½, 3¼-inch Side Adjusting Bow Pencil 1535½, 3¼-inch Side Adjusting Bow Pen 1575½, 4-inch Drop Spring Bow Pen 1614½, 5-inch Spring Blade Ruling Pen 1615½, 5½-inch Spring Blade Ruling Pen Morocco Covered or Folding Pocket Case with Lead Case
918	$(2084\frac{1}{2} \text{ SH})$	Above with Stainless Steel Spring-hinge Pens

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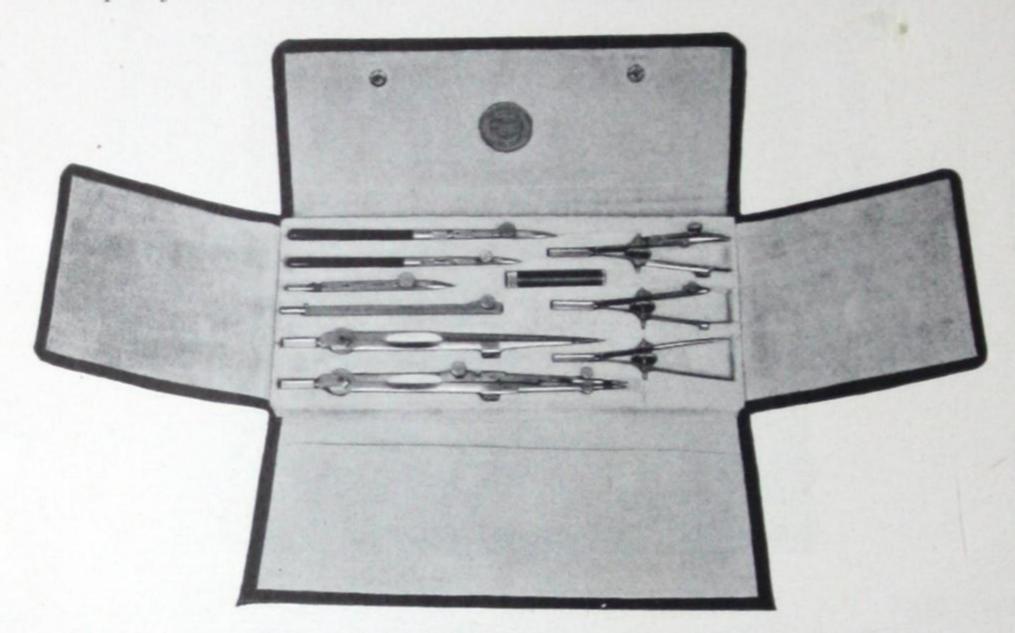
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ALTENEDER DRAWING INSTRUMENTS

SETS WITH CENTRE ADJUSTING BOWS

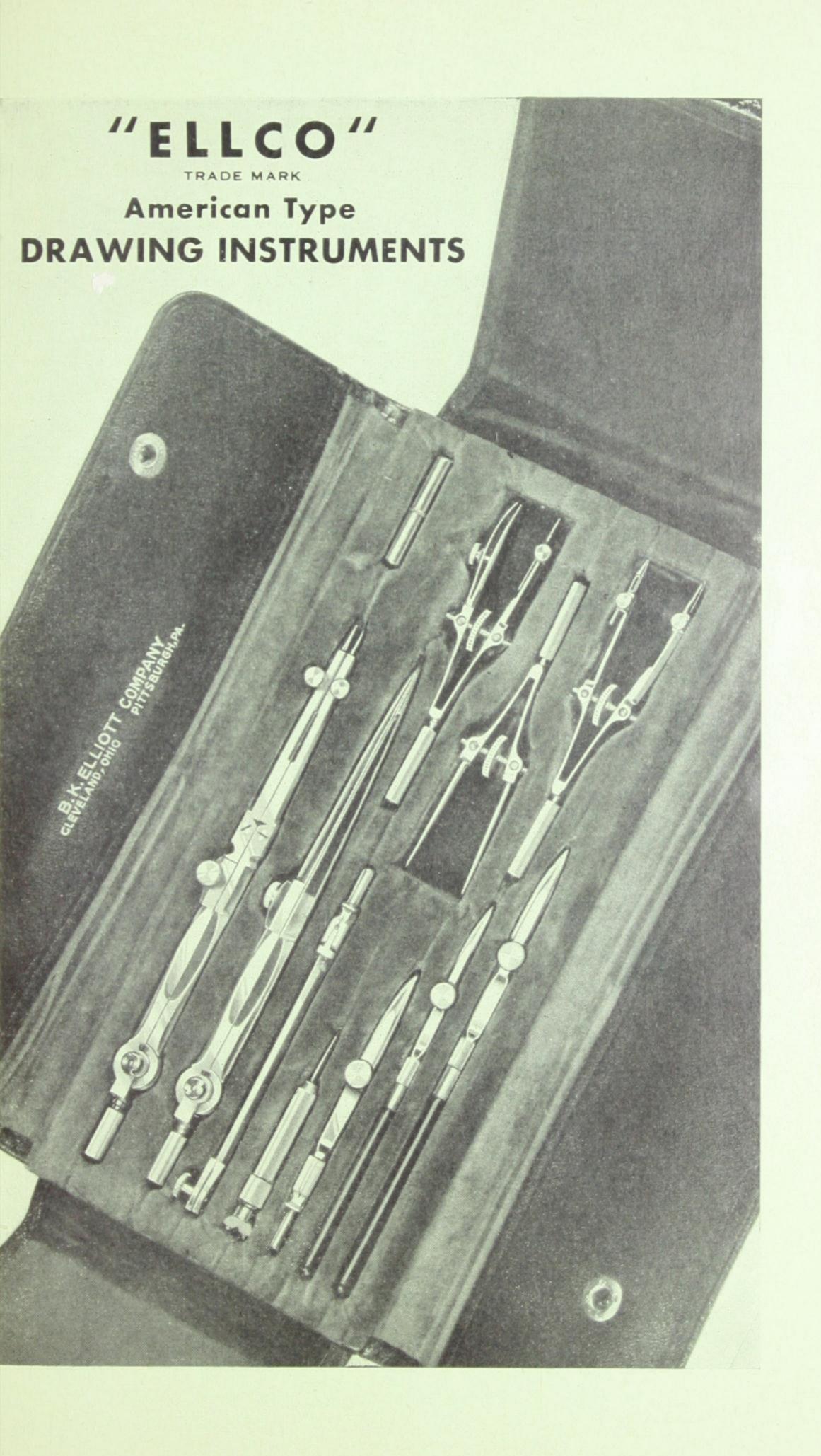
Specify whether Morocco Covered or Folding Pocket Case is desired



70921	(2054)	1404, 6¼-inch Pen and Pencil Compass with Bar 1580, 3¼-inch Centre Adjusting Bow Divider 1582, 3¼-inch Centre Adjusting Bow Pencil 1585, 3¼-inch Centre Adjusting Bow Pen 1614, 5-inch Spring Blade Ruling Pen EACH Morocco Covered or Folding Pocket Case with Lead Case.
70922	$(2054\frac{1}{2})$	Above with Stainless Steel Pens
70923	$(2054\frac{1}{2} \text{ SH})$	Above with Stainless Steel Spring-hinge Pens
70924	(2070)	1404, 6¼-inch Pen and Pencil Compass with Bar 1423, 5¾-inch Hair-spring Divider 1580, 3¼-inch Centre Adjusting Bow Divider 1582, 3¼-inch Centre Adjusting Bow Pencil 1585, 3¼-inch Centre Adjusting Bow Pen 1614, 5-inch Spring Blade Ruling Pen 1615, 5½-inch Spring Blade Ruling Pen Morocco Covered or Folding Pocket Case with Lead Case
70925	$(2070\frac{1}{2})$	Above with Stainless Steel Pens
70926	$(2070\frac{1}{2} \text{ SH})$	Above with Stainless Steel Spring-hinge Pens
70927	(20871/2)	1404½, 6¼-inch Pen and Pencil Compass with Bar 1423, 5¾-inch Hair-spring Divider 1581½, 3¼-inch Centre Adjusting Bow Divider 1582½, 3¼-inch Centre Adjusting Bow Pencil 1585½, 3¼-inch Centre Adjusting Bow Pen 1575½, 4-inch Drop Spring Bow Pen 1614½, 5-inch Spring Blade Pen 1615½, 5½-inch Spring Blade Ruling Pen Morocco Covered or Folding Pocket Case with Lead Case
70928	$(2087\frac{1}{2} \text{ SH})$	Above with Stainless Steel Spring-hinge Pens

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"ELLCO" Flat Type DRAWING INSTRUMENTS

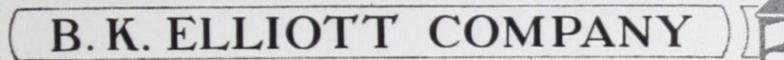
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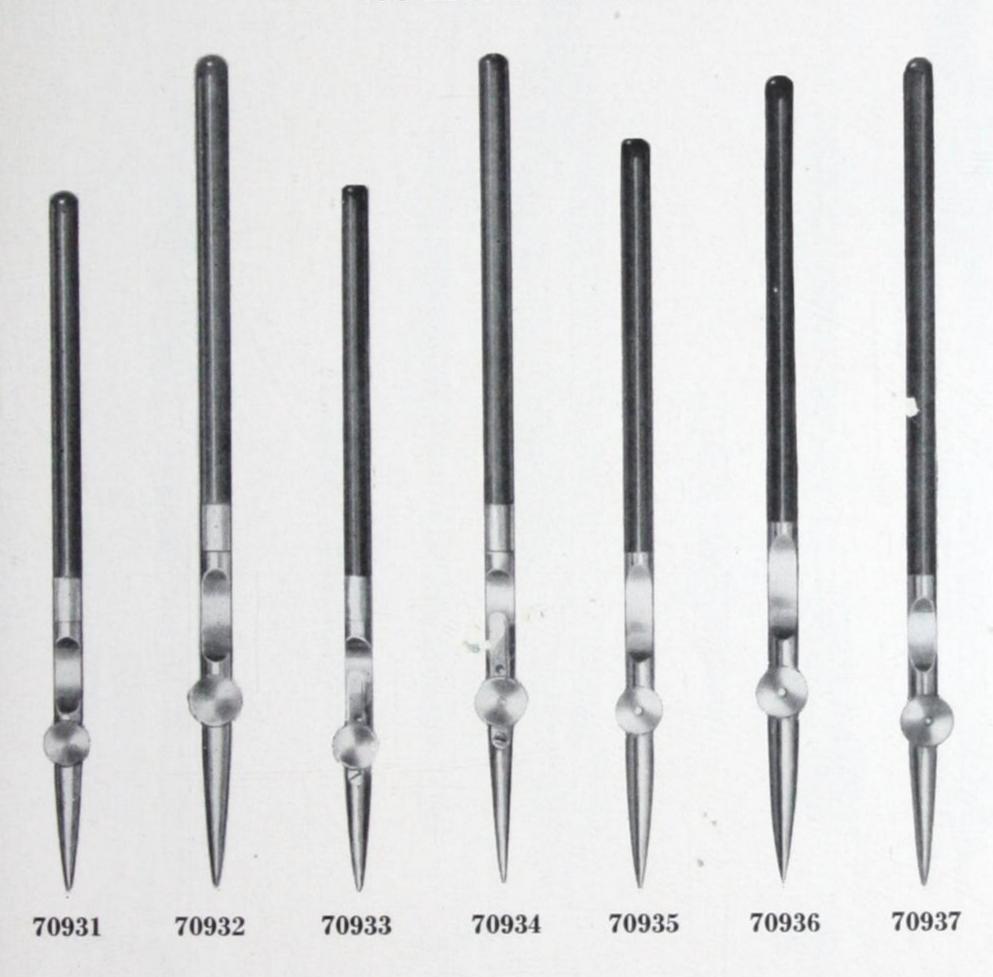




DRAWING INSTRUMENTS

These Drawing Instruments, of Swiss manufacture, are of the highest quality of material and workmanship throughout. Recognized for years as one of the foremost in Drawing Instrument manufacture. We offer these instruments with the utmost confidence.

RULING PENS



EACH

70931	"Ellco" Ruling Pen, 41/4-inch spring blade, black aluminum handle
70932	"Ellco" Ruling Pen, 51/8-inch spring blade, black aluminum handle
70933	"Ellco" Ruling Pen, 4½-inch spring blade, lever release, black aluminum handle
70934	"Ellco" Ruling Pen, 5½-inch spring blade, lever release, black aluminum handle
70935	"University" Ruling Pen, 41/4-inch spring blade, black aluminum handle.
70936	"University" Ruling Pen, 51/8-inch spring blade, black aluminum handle.

70937

See Price List Inside Back Cover

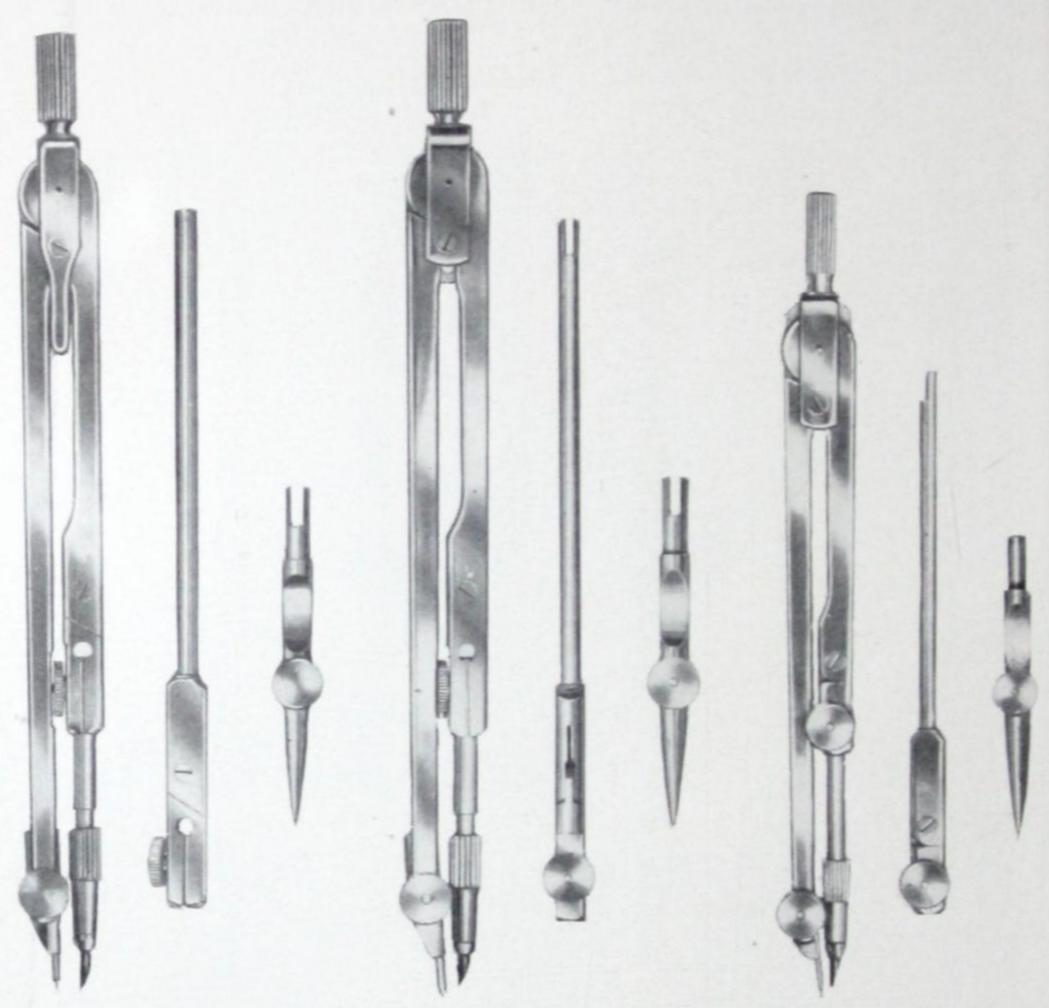
"Scholastic" Ruling Pen, 51/8-inch spring blade, black metal handle....

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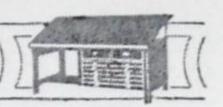


COMPASSES

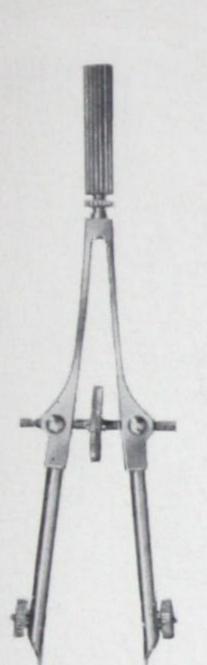


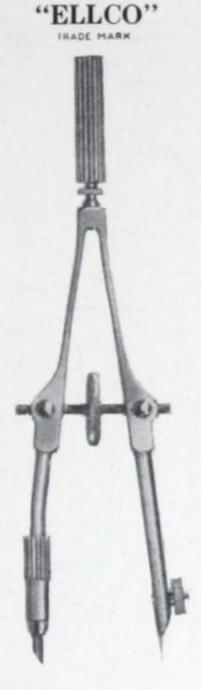
70941 70942 70943

70941 "Ellco" Compass, 6½-inch Self centering head, with replaceable pencil and pen parts and lengthening bar.
 70942 "University" Compass, 6½-inch self centering head, with replaceable pencil and pen parts and lengthening bar.
 70943 "Scholastic" Compass, 5-inch self centering head, with replaceable pencil and pen parts and lengthening bar.



BOW INSTRUMENTS







70951

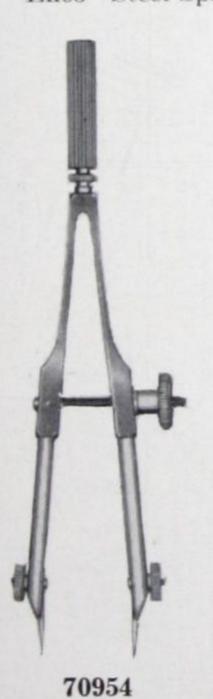
70951 70952

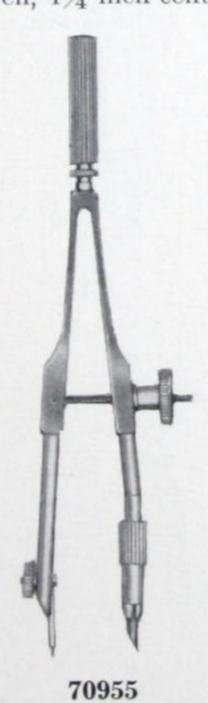
70953

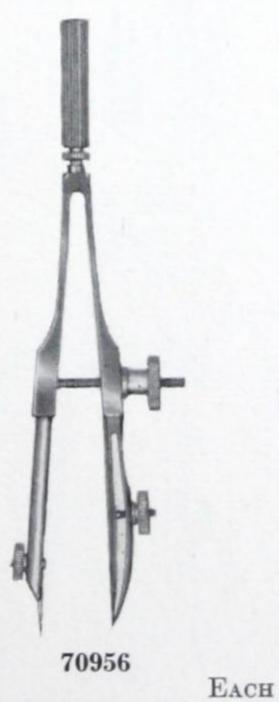
70952

EACH

"Ellco" Steel Spring Bow Divider, 4½-inch center adjustment........
"Ellco" Steel Spring Bow Pencil, 4½-inch center adjustment.........
"Ellco" Steel Spring Bow Pen, 4½-inch center adjustment.............







70954 70955 70956



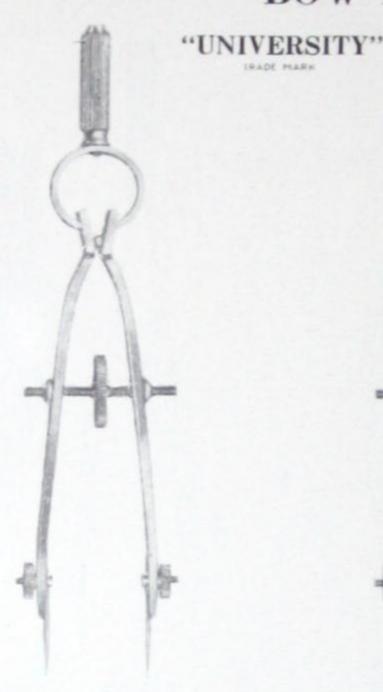


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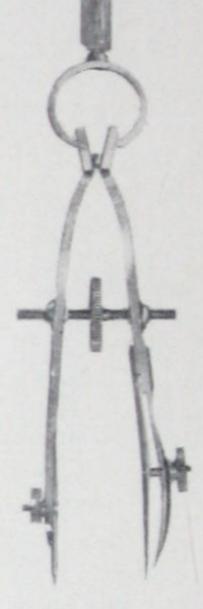
BOW INSTRUMENTS

TRADE MARK

TRADE MARK



"SCHOLASTIC"



70961

70962

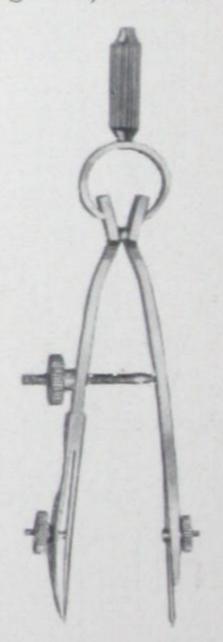
70963

EACH

"University" Bow Divider, center adjustment, circular spring head, 70961 4 inches.

"University" Bow Pencil, center adjustment, circular spring head, 4 inches. "University" Bow Pen, center adjustment, circular spring head, 4 inches. 70962 70963





70964

70965

70966

EACH

70971

70972

70973

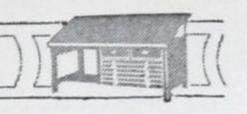
70974

70975

"Scholastic" Bow Divider, side adjustment, circular spring head, 3½ inches 70964 "Scholastic" Bow Pencil, side adjustment, circular spring head, 31/2 inches. 70965 "Scholastic" Bow Pen, side adjustment, circular spring head, 31/2 inches. 70966

See Price List Inside Back Cover

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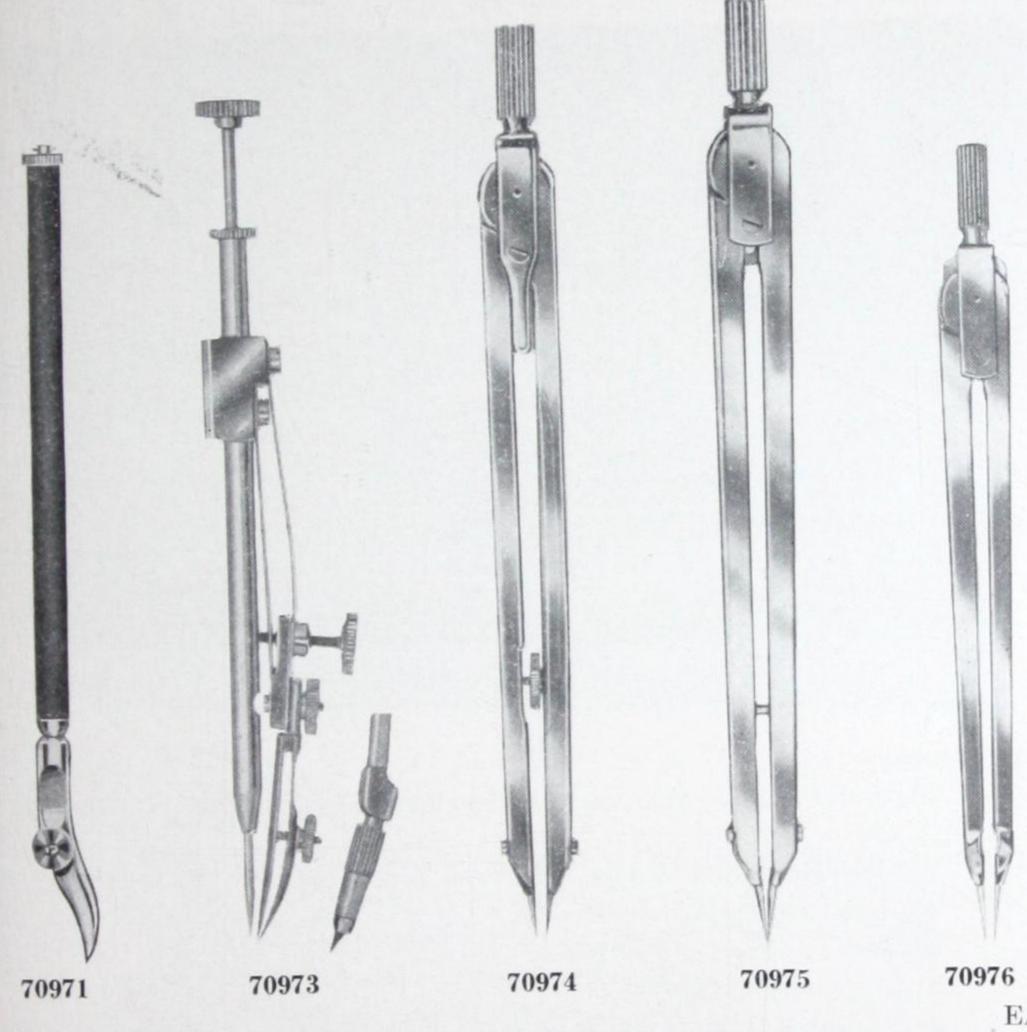


Contour Pen

70975

Drop Spring Bow Instruments

Dividers



EACH

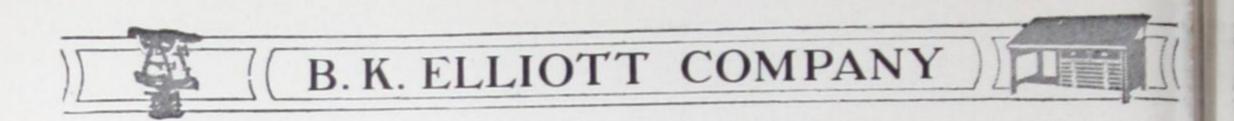
"Ellco" Contour Pen, 4½ inches, tubular-metal handle, blades fastened to a rod in a hollow handle, with screw at upper end to set firm for straight lines or loose to follow curves.
"Ellco" Drop Double Spring Bow Pen, 4¾ inches, with self adjusting point for small circles, in case.
"Ellco" Drop Double Spring Bow Pen and Pencil, 4¾ inches, with self adjusting point for small circles, in case.
"Ellco" 5¾-inch Hairspring Dividers, self centering head, replaceable

"University" 534-inch Plain Dividers, self centering head, replaceable steel points...... Dividers self centering head replaceable

70976 "Scholastic" 4¾-inch Plain Dividers, self centering head, replaceable steel points.....

See Price List Inside Back Cover

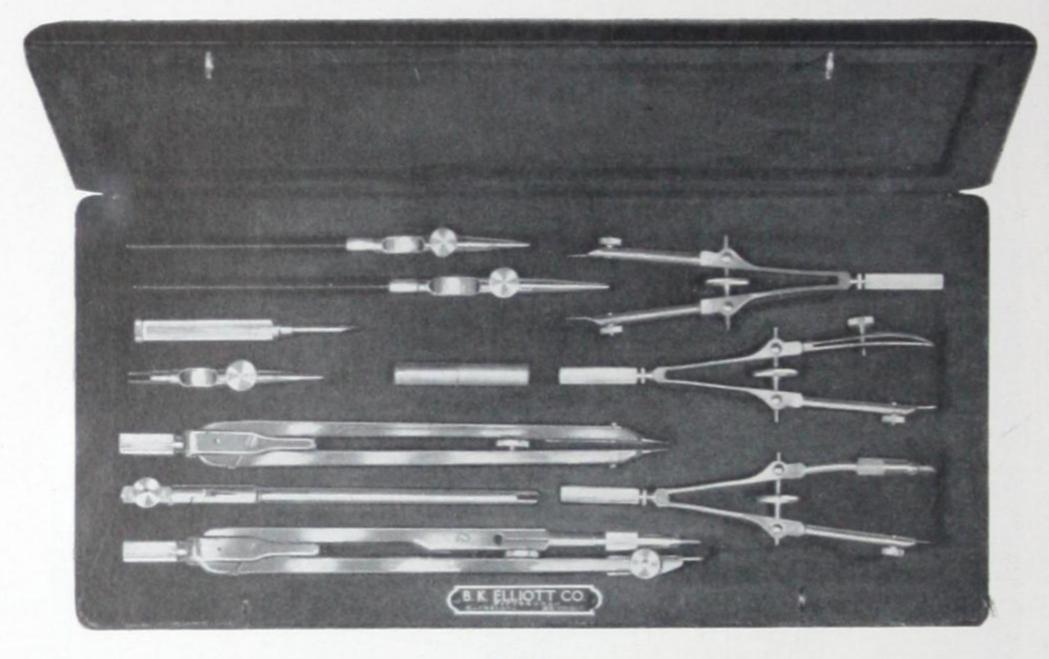
Some Page 97 Johnson



DRAWING INSTRUMENTS

"ELLCO"

TRADE MARK



70981

TOOO! Cat containing		
70981 Set containii	no.	

- 6½-inch Compass, pen, pencil and lengthening bar, with self centering head
- 5¾-inch Hairspring Divider, replaceable points, self centering head
- 41/4-inch Steel Spring Bow Divider
- 41/4-inch Steel Spring Bow Pencil
- 41/4-inch Steel Spring Bow Pen
- 41/4-inch Ruling Pen, black aluminum handle
- 51/8-inch Ruling Pen, black aluminum handle

Screw Driver

In

- 70982 Set Each
 - Same as above but with folding pocket book case.....

70983 Set Each

Same as 70981 but with bow instruments 70954, 70955, 70956, with side adjustment....

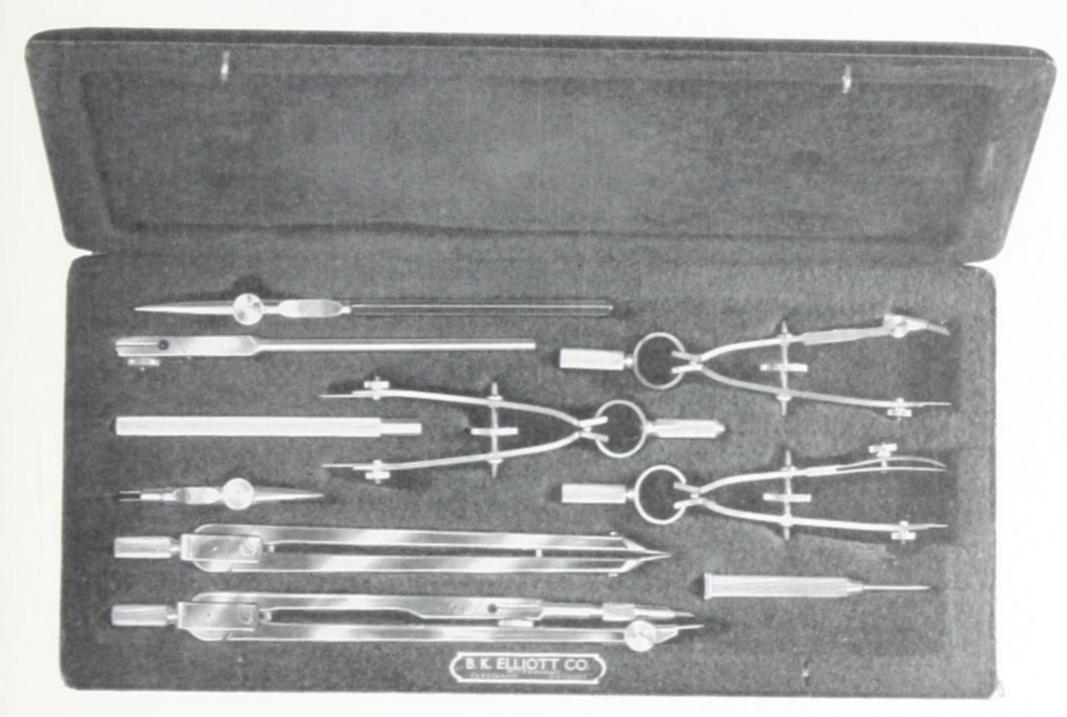
See Price List Inside Back Cover

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DRAWING INSTRUMENTS "UNIVERSITY"



70991

70001	CLI		100			
70991	Set	00	nt	an	III	O" "
. OUUL	NO LO	200	A. A. S./	CALLE	1.1.1.	_ •

- 6½-inch Compass, pen, pencil parts and lengthening bar, self centering head, metal handle for pen part
- 5¾-inch Divider, replaceable needle points, self centering head
- 4-inch Steel Spring Bow Divider, center adjustment
- 4-inch Steel Spring Bow Pencil, center adjustment
- 4-inch Steel Spring Bow Pen, center adjustment
- 5½-inch Ruling Pen, black aluminum handle

Screw Driver lead box

EACH

In Velvet-lined Bar-lock case.....

70992 Set

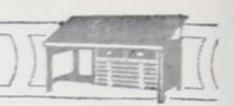
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Same as above but with Folding Pocket book case.....

See Price List Inside Back Cover

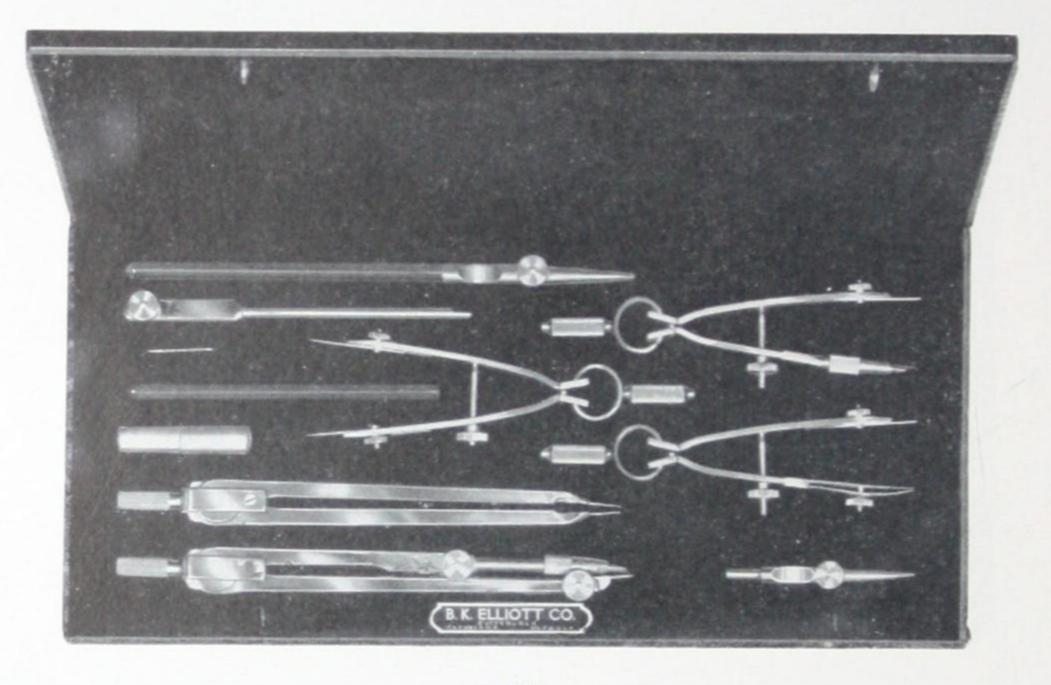
mones Page 99 Johnson





DRAWING INSTRUMENTS "SCHOLASTIC"

TRADE MARK



71001

71001 Set containing:

5-inch Compass, pen, pencil and lengthening bar, handle for pen parts

43/4-inch Dividers, replaceable points and self centering head

3½-inch Steel Spring Bow Divider, side adjustment

3½-inch Steel Spring Bow Pencil, side adjustment

3½-inch Steel Spring Bow Pen, side adjustment

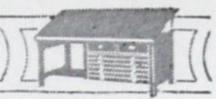
5½-inch Ruling Pen, Black metal handle

Tube with lead and needle points

See Price List Inside Back Cover

moner PAGE 100 Johnson



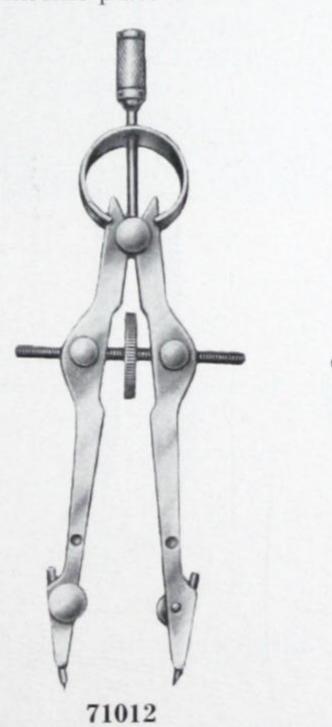


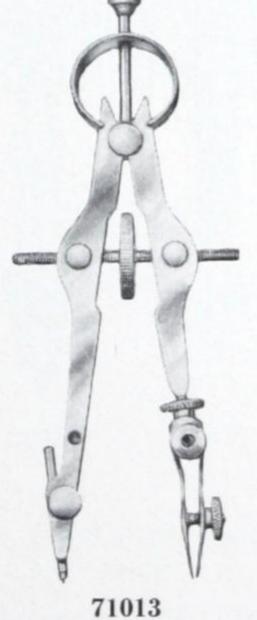
ELLIOTT-VEMCO DRAWING INSTRUMENTS

Light Weight: The Vemco open truss design makes possible the construction of these compasses with a 40 per cent reduction in weight, as compared to the older types.

Stronger: For the most part the compasses are constructed of steel to insure rigidity and durability. The center screw of each instrument articulates with the legs by cylindrical nuts. The legs bear upon a double-grooved hinge pin of broad base, insuring strength and perfect alignment.

Finish: The legs of our compasses are satin chrome-plated. The small parts are bright chrome-plated.





71011

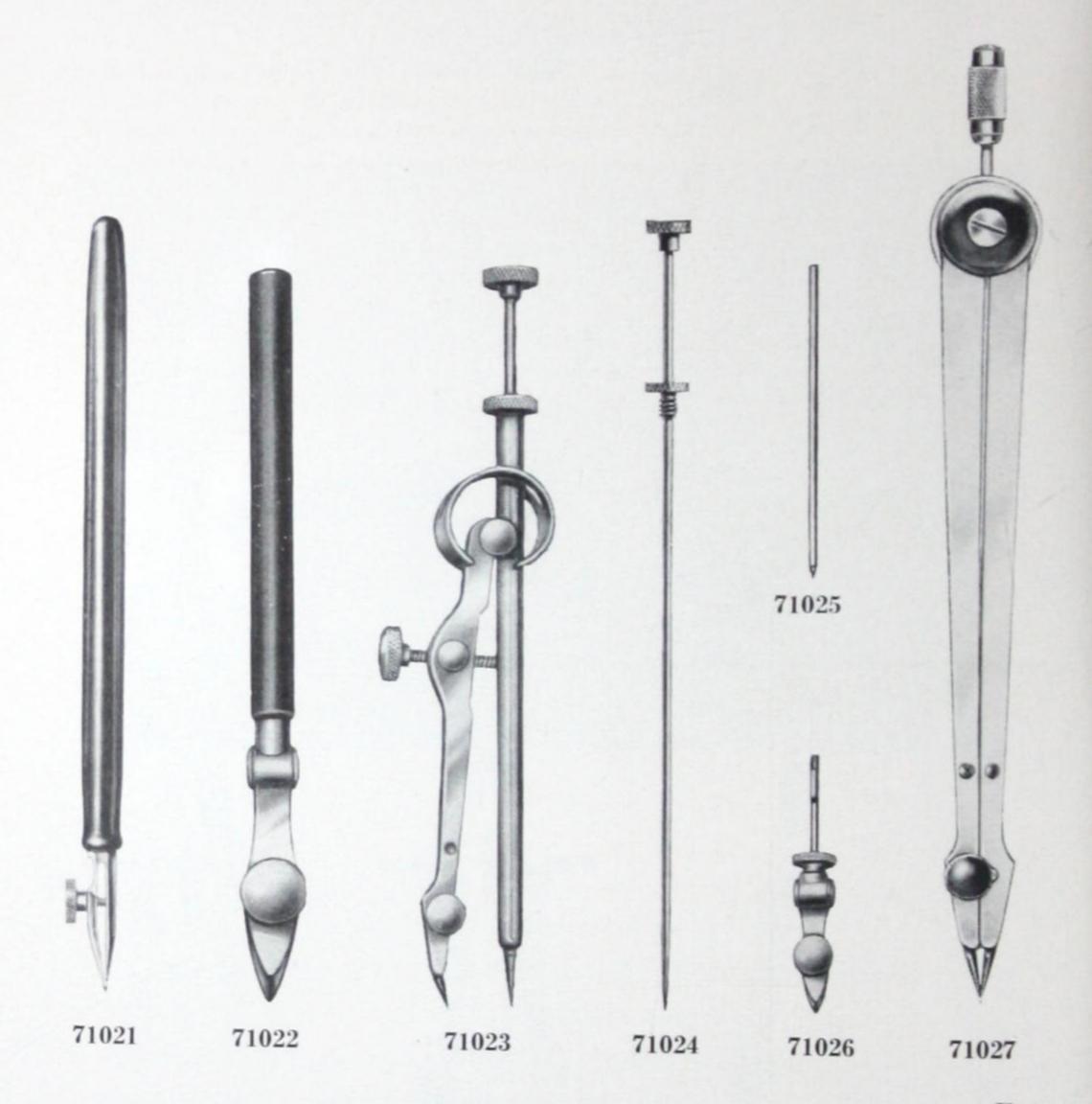
EACH

71013 Elliott-Vemco 4½" Bow Pen.....





ELLIOTT-VEMCO DRAWING INSTRUMENTS



71021	Elliott-Vemco Microliner Ruling Pen, 5½ inches, short blade, surgical steel
71022	Elliott-Vemco Ruling Pen, 51/4 inches, wide blade rolled spring steel
71023	Elliott-Vemco Drop Bow Pencil, 5 inches
71024	Long Needle Point shaft for Drop Pencil
71025	Extension Needle Point for Elliott-Vemco Center Wheel Bow Pencils
71026	Pen Attachment for all Elliott-Vemco Bow Pencils
71027	Elliott-Vemco Friction Divider, 6 inches, replaceable needle points

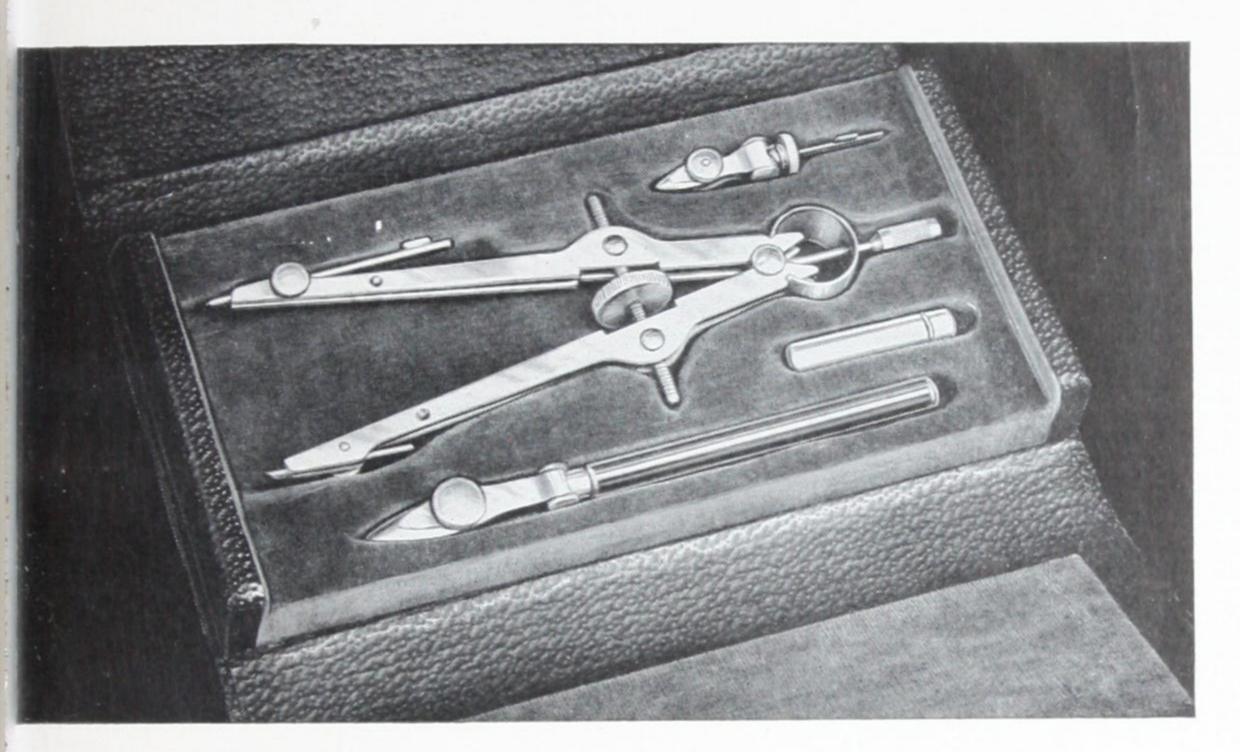
See Price List Inside Back Cover

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ELLIOTT-VEMCO DRAWING INSTRUMENTS



71031

EACH Elliott-Vemco Set, containing: 71031 6½" Bow Compass, interchangeable (3 instruments in one) Pen attachment for Bow Compass 51/4" Ruling Pen Long Shoulder Point Extension Small box containing pencil and divider points. Packed in leatherette velvet-lined case Elliott-Vemco Set, containing: 71032 Same instruments 71031, packed in cardboard box..... 71033 Elliott-Vemco Set, containing: 4½" Compass, interchangeable (3 instruments in one) Pen Attachment for 4½" compass

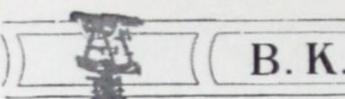
See Price List Inside Back Cover

51/4" Ruling Pen

Long Shoulder Needle Point Extension

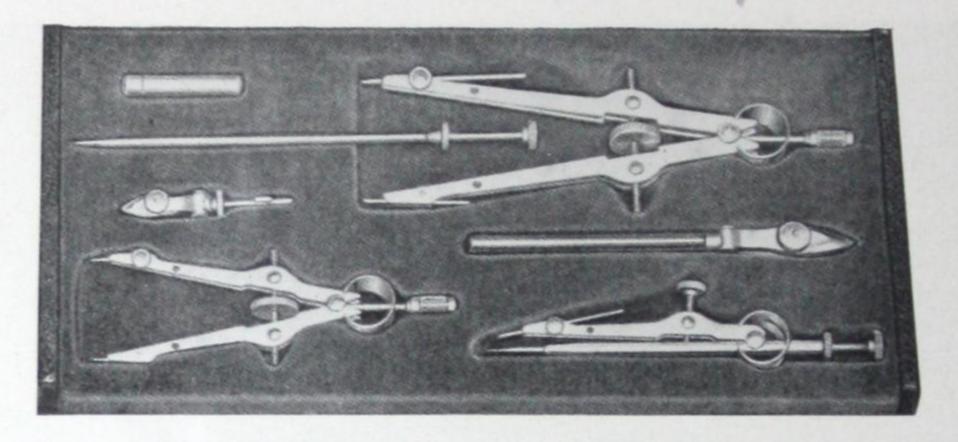
Small box containing pencil and divider points.

MAGE 103 Johnson





ELLIOTT-VEMCO DRAWING INSTRUMENTS



71042

Elliott-Vemco, containing: 71041

6½" Bow Compass, interchangeable (3 instruments in one)

4½" Bow Compass, interchangeable (3 instruments in one)

Pen attachment for 6½" and 4½" bows

51/4" Ruling Pen

Long Shoulder Needle Point Extension

Small box containing pencil and divider points. Packed in leatherette velvet-lined case Each

71042 Elliott-Vemco Set, containing:

6½" Bow Compass, interchangeable (3 instruments in one)

4½" Bow Compass, interchangeable (3 instruments in one)

Pen attachment for 6½" and 4½" bows

Long Shoulder Needle Point Extension

51/4" Ruling Pen

5" Drop Bow Pen

Long Shaft for Drop Bow Pen

Small box containing pencil and divider points. Packed in leatherette velvet-lined case Each

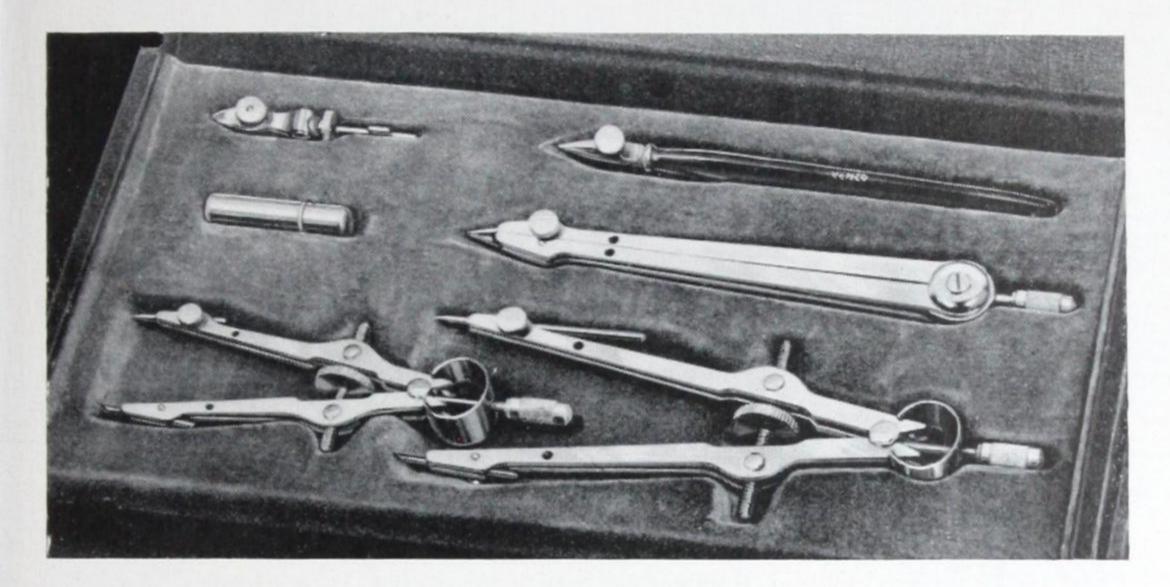
See Price List Inside Back Cover

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ELLIOTT-VEMCO DRAWING INSTRUMENTS



71051

71051 Set containing:

6½" Compass

 $4\frac{1}{2}$ " Compass

Friction Divider

Pen Attachment

Long Shoulder Point

Microliner Ruling Pen

Small box with pencil and divider points

Velvet lined Pocket-book Case Each

71052 Set containing:

6½" Compass

4½" Compass

4½" Pen Compass

Friction Divider

Pen Attachment

Long Shoulder Point

Microliner Ruling Pen

Small box with pencil and divider points

See Price List Inside Back Cover

www. Page 105 Jeneson



ELLIOTT-BEAM COMPASSES

PRACTICAL

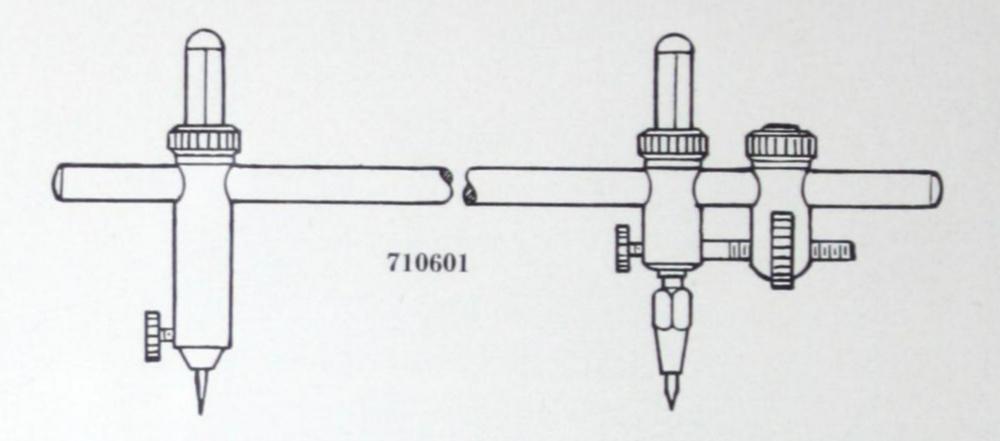
DURABLE

NON-CORRODING

SWIVEL GRIPS

50-inch Beam

MICROMETER ADJUSTMENT



Elliott Beam Compasses are simple in construction, easy to operate. The bars are made of aluminum alloy . . . strong, light and non-corroding. Compasses are furnished with a 12-inch bar, with extra bars available in lengths from 6 to 48 inches. These can be used individually or with No. 710602 Coupling for added length. Except for the anchor and scribing pin, which are made from specially treated steel, all other parts and fittings are brass, nickel-plated, giving them permanence, durability and non-corroding qualities. Pen, pencil and scribing pin parts are interchangeable.

710601	Beam Compass, with 12-inch aluminum bar, swivel grips, scribing pin and micrometer adjustment
710602	Coupling, 2 inches long, brass nickel-plated.
	The state of the s
110004	0-inch aluminum par
710605	12-inch aluminum bar
710606	18-inch aluminum bar
710607	= 1 men addininum par
110000	36-inch aluminum bar
710609	is mon addinimum par.
710610	48-inch aluminum bar

ERA BEAM COMPASS

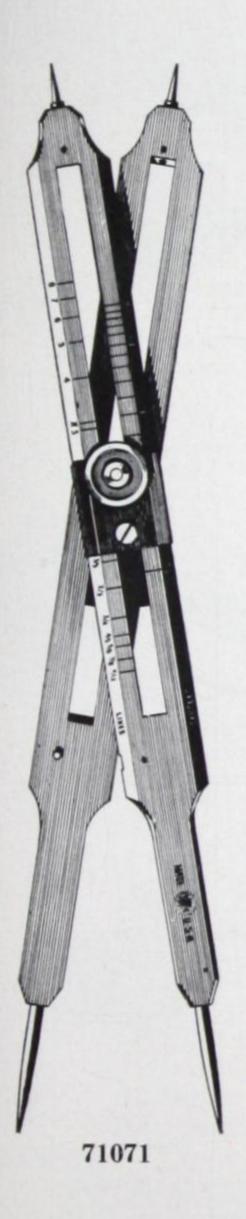
A newly designed beam compass. Knurled thumb-rollers make fine adjustments rapidly. Adjustment firmly maintained by spring-loaded friction surfaces—no screws. Designed to minimize lead breakage. Changes from one beam to another made easily and quickly. Lies flat and prevents damage to drawings and other instruments. Made of aluminum alloy, anodized for durability and appearance—stainless, satin finish.

710611	Era Beam Compass Set, pencil slide, center slide 7-inch and 13-inch	PER SET
710612 710613	Pen slide	Еасн

See Price List Inside Back Cover

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PROPORTIONAL DIVIDERS



71071 8-inch Proportional Divider; divided for lines and circles. Duraluminum frame with replaceable spring steel points; in velvet-lined leatherette case.

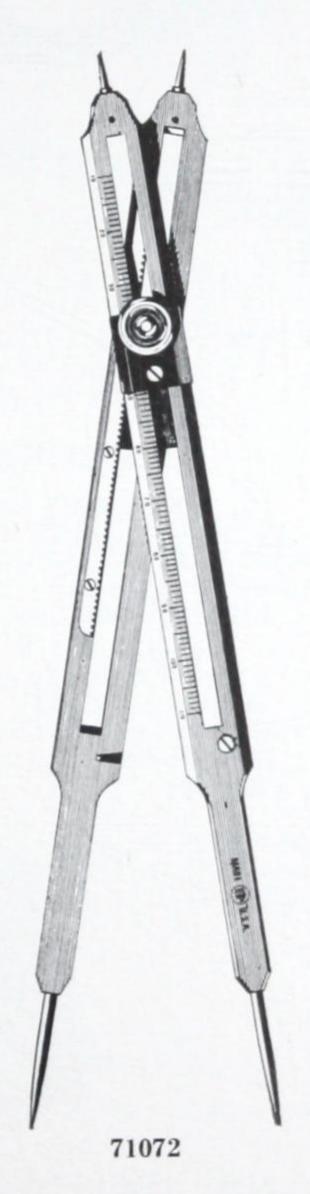
EACH....

71072 8-inch Proportional Divider; divided for lines and circles, WITH RACK MOVEMENT. Duraluminum frame with replaceable spring steel points; in velvet-lined leatherette case.

EACH.....

71073 10-inch Proportional Divider; universal scale with vernier and RACK MOVEMENT; range of ratio 1:1 to 10:1 and chart for other settings; duraluminum frame with replaceable spring steel points; in velvet-lined leatherette case.

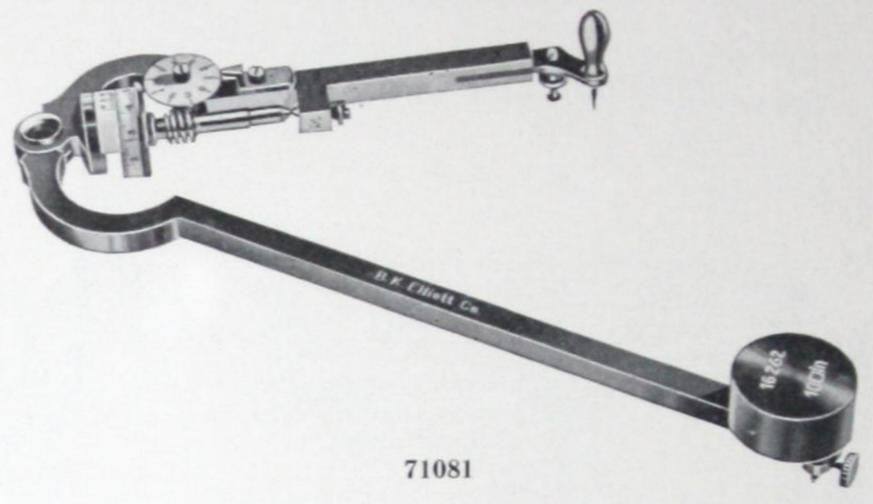
EACH....







PLANIMETERS



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Amsler's Polar Planimeter, German Silver, arranged for measurement of areas in square inches; viz., 10, 1, 1-10 and 1-100 square inches, with directions, in case

COMPENSATING POLAR PLANIMETERS

Compensating Polar Planimeters consist of two principal parts: the Tracer Arm, which carries the Tracing Point and Carriage with Measuring Wheel; and the Pole Arm, attached to the Pole around which the instrument revolves.

Every Elliott Compensating Planimeter is accurately manufactured and carefully calibrated. The finish—lacquered and chrome-plated—is both pleasing in appearance and durable.

EACH

71082 Elliott Compensating Polar Planimeter. Adjustable Tracer Arm approximately 4½ inches. Length of Pole Arm approximately 7½ inches. Improved Pole Weight. Smallest reading on Vernier .01 sq. in.

The Tracer Arm is of fixed length, permitting measurements of actual size, thus eliminating all computations. Sold in attractive velvet-lined case with Testing Rule included.....

71083 Elliott Compensating Polar Planimeter. Like No. 71082 but with adjustable Pole Arm.....

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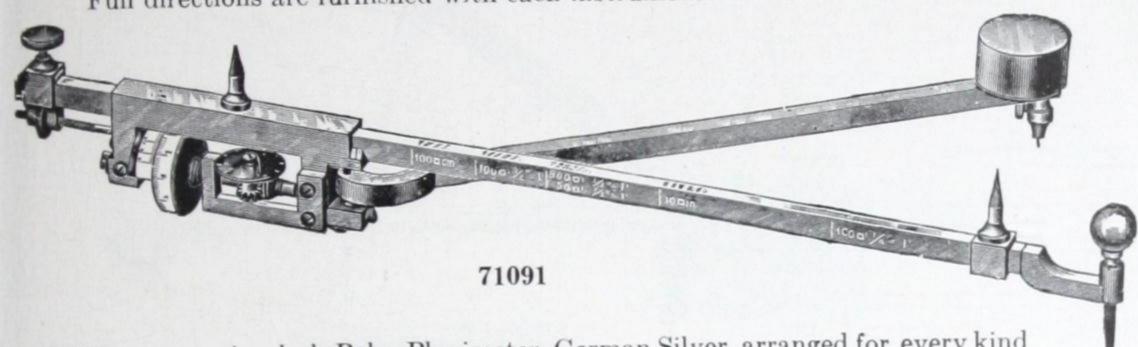




PLANIMETERS

The Polar Planimeter is the simplest and most convenient instrument for measuring the area of surfaces on drawings and plans. It is of greatest importance to engineers and others, as plots of ground, area of railroad profile, indicator diagrams, sectional areas of vessels, areas of displacement of floating bodies, etc., can be ascertained very quickly.

Full directions are furnished with each instrument.



71091

Amsler's Polar Planimeter, German Silver, arranged for every kind of measurement, with special arrangement for finding rapidly the mean height of indicator diagrams. In morocco case, with Each directions.....

Device for Finding the Mean Height of Indicator Diagrams

This device consists of two fine steel points, one attached to the upper side of the tracer arm and the other to the surface of the carriage in which this arm slides. To find the mean height of indicator

diagram, take, by shifting the slide on the bar and keeping the planimeter upside down, the diagram lengthwise between the steel points on the upper side of the instrument, as shown in the adjoining figure. Then place the planimeter without altering the relative

position of slide and bar in the usual way upon the drawing-needle point outside the diagram—and follow the outline of the diagram with the tracing point. The difference of the readings at the beginning and at the end of the operation, divided by 0.4 is then the mean height of the diagram, expressed in inches.

Example:

(0.4) 0.488 equals 1.12 inches, equals mean height.

If the diagrams for up and down stroke are measured jointly, divide by 0.8 instead of 0.4.

Mean pressure equals mean height multiplied by scale of spring of indicator. Supposing the scale of the spring in the above example is "I" equals 80 pounds per square inch, then

 0.448×80 = 89.6 pounds per square inch. Mean pressure = 0.4

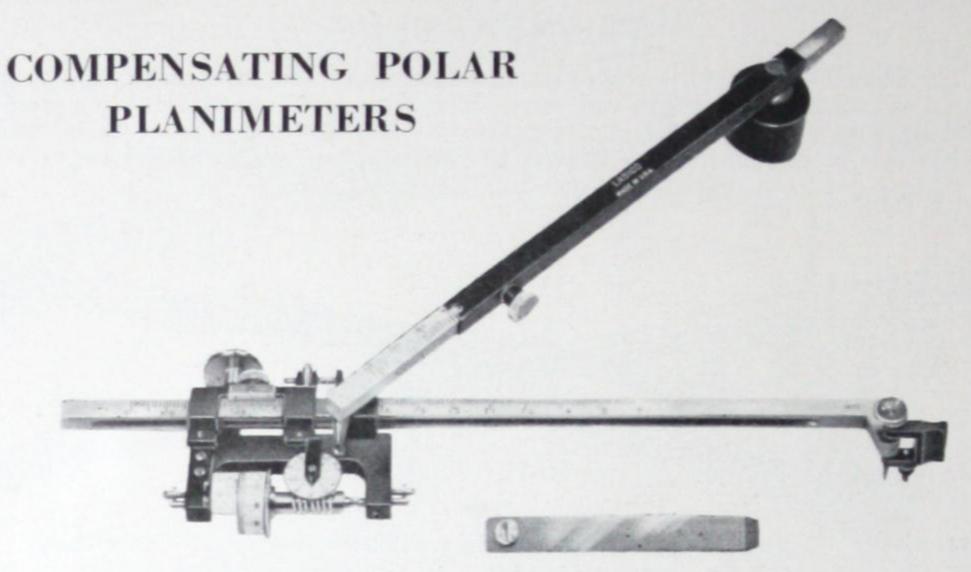
The number of pounds per inch of height being usually a multiple of 4, the arithmetical work is thus extremely simple.

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EACH

- Fliott Compensating Polar Planimeter with graduated Tracer Arm approximately 6½ inches in length. Pole Arm is approximately 7½ inches in length. Tracer Arm is adjusted for Vernier unit of 0.015 sq. in. on scale 1:1. Improved Pole Weight. Winged handle with adjustable support. Furnished in Morocco velvet-lined case, with testing rule.
- 71102 Elliott Compensating Polar Planimeter like No. 71101 but with adjustable Pole Arm.
- Tracer Arm approximately 7½ inches in length. Pole Arm is approximately 7½ inches in length. This planimeter can be set in any scale in either inches or metric measurements. Furnished in Morocco velvet-lined case with Testing Rule. Scale: 1"=5', 1"=10', 1"=25', 1"=40', 1"=50', 1"=100'...
- 71104 Elliott Compensating Polar Planimeter. Like No. 71103 but with adjustable Pole Arm....

ADJUSTABLE POLE ARM



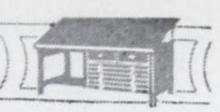
- 71105 The adjustable Pole Arm is graduated for the various settings furnished with instrument, and when the instrument is used with the pole inside of a figure, it can be adjusted so that the constant is a round number (20,000) for all settings. The instrument is used in the same manner with the pole inside as when pole is on the outside, and by tracing the object with the pole on right and on left of tracer arm, and by taking the mean of the readings, greater areas can be accurately measured.
 - The extensive range of the tracer arm, together with the extensibility of the pole arm, make it possible to measure very large objects with the pole outside. Very small surfaces can be measured by reducing the length of the pole and tracer arms. Approximate length of pole arm, 13 inches.

Adjustable Pole Arm.....

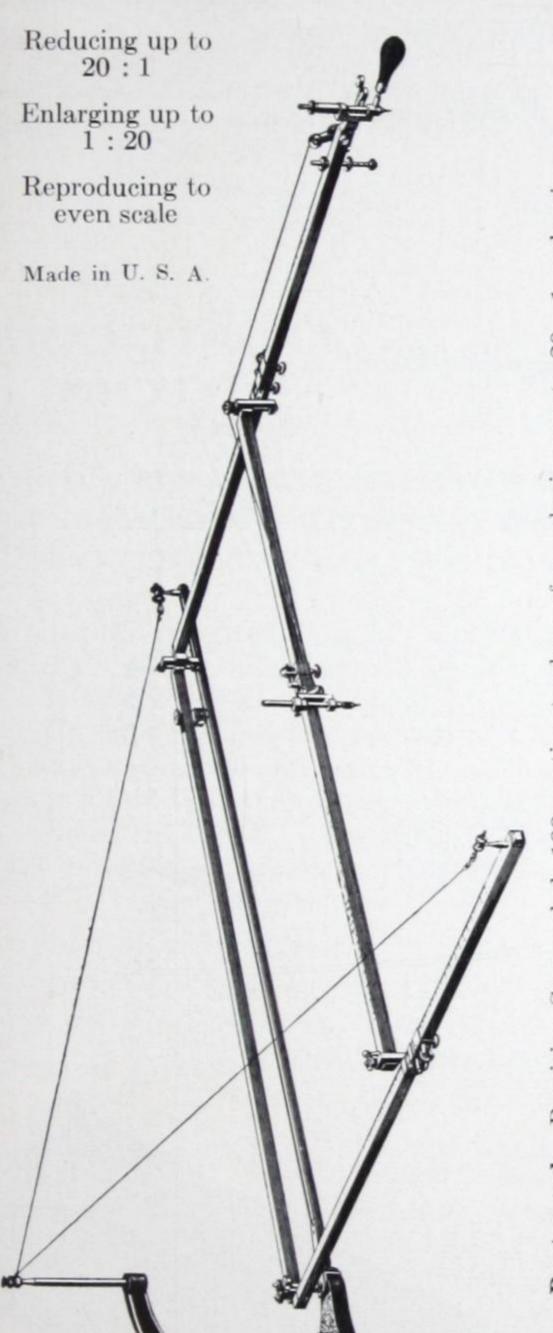
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B. K. ELLIOTT COMPANY



SUSPENDED PANTOGRAPHS



steel points, one level, two boxes of leads, and instructions for use. Formulae for computing the Instrument fits into compact 4-foot case; Pantograph—Precision Suspended; 100 centimeter bars; for reducing up to 20: 1, enlarging fully divided for all ratios; slides provided with verniers and micrometer adjustments; extra supporting bar and suspension wires for setting the pole within the parallelogram in which position it will reduce, enlarge, or reproduce. Pole and pencil points interchangeable; finger control mechan-Hollow square metal bars connected by pivot joints ism for lifting and lowering the pencil; solid iron standard, cross-level, and leveling screws; weights; adjustable foot-rest and spring-back tracing point; pencil holder with two weights, setting of any ratio is engraved on the instrument. up to 1:20 or for reproducing to even scale. complete with extra case for standard.

EACH

71111 Suspended Pantograph.....



PANTOGRAPH

For Enlarging and Reducing Drawings

Pantograph, rigidly constructed, all metal arms, ¼-inch square. Arms 21 inches long, adjustable for 21 different ratios, ranging from 1½ to 8, to reduce, enlarge, or same size.

71121 Metal Pantograph.....

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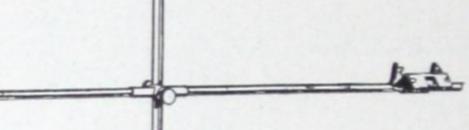
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ELLIOTT CAMERA LUCIDA

For
Enlarged
Reduced or
Same Size
Reproductions

/

71122

FREELY PORTABLE . . . INSTANTLY ADJUSTABLE . . . EASY TO OPERATE . . . SIMPLE IN DESIGN . . . STURDY, FOOL-PROOF CONSTRUCTION

Until now, all previous Camera Lucida models clamped to the drawing board or table. This lack of freedom . . . movability . . . caused considerable inconvenience to the user and greatly limited the making of drawings. Now, the Elliott Camera Lucida can be placed anywhere desired simply by lifting it and setting it down. No adjustments. The Elliott Camera Lucida is freely portable . . . the new metal base makes it so.

EACH

71122 Elliott Camera Lucida.....

CLAIRE-VUE CAMERA LUCIDA

Chrome Finish, with three-section telescopic stand, and spiral micrometer adjustment. Six auxilliary lenses for enlarging or reducing. Two-way tilt mount for lens and prism.

EACH

71123 Claire-Vue Camera Lucida.....



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SLIDE RULES VARIPHASE

MANNHEIM TYPE

In addition to the regular Scales A, B, C and D, this Variphase Mannheim Type Slide Rule has two other useful Scales, K-cube below Scale D and CI-inverted between Scales B and C.

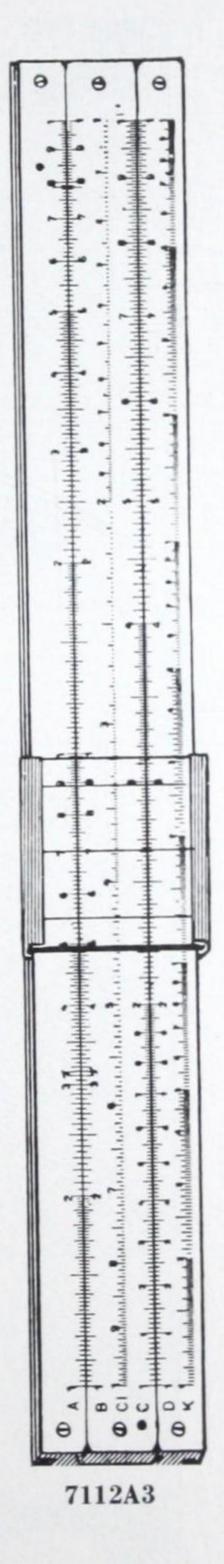
Scale K is three complete logarithmic scales in combination with C-D. Cubes and cube roots can be read directly on these Scales.

Scale C-I is an inverted single logarithmic, reciprocal scale. Three factors can be taken at one setting of the Slide and reciprocals can be read by means of the indicator. Almost any combination of three factors involving cubes, cube roots, squares and square roots can be taken.

The reverse side of the Slide has a Scale of Sines, Cosines, tangents and of equal parts, known as the S, L, and T Scales, indexed to be used with the other Scales. Together with the sliding indicator, these Scales allow almost any combination of three factors involving Squares, Cubes, roots and fractional powers or roots, along with logarithmic and trigonometric functions to be solved without resetting slide.

EACH

7112A1	Mannheim 5" Slide Rule (without CI and K
	Scale) in leather case
7112A2	Variphase 5" Slide Rule in leather case
711943	Variabase 10" Slide Rule in Morocco case



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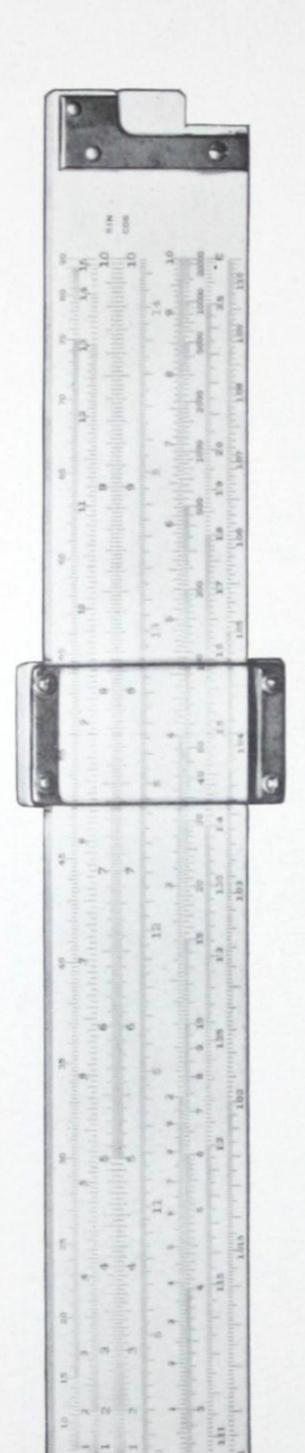
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SLIDE RULES DUO PHASE

LOG LOG TYPE



Duo Phase Log Log Type Slide Rules are made with three different graduations as indicated below: Vector Type, Trig Type and Trigonometric Decimal Type, all of which are accurately machine divided on both sides of the Rule, on white celluloid.

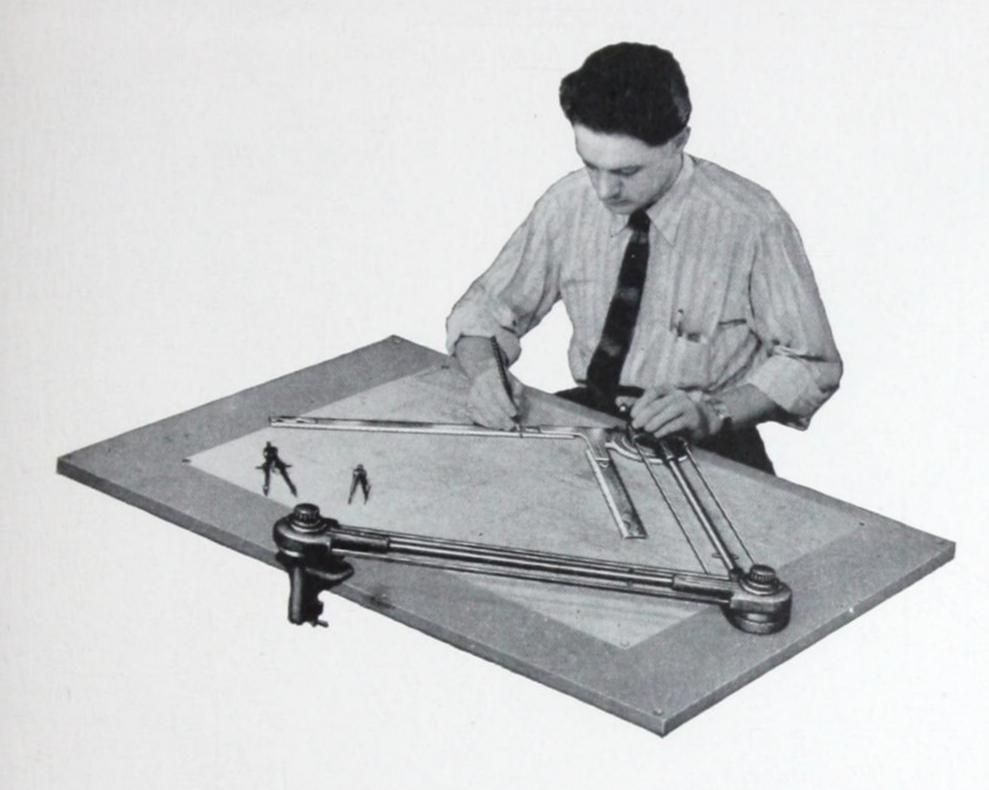
Duo Phase Slide Rules have all the Scales of 7112A3
Vari Phase Rules and in addition have the Log Log Scales.

- 7112B1 Duo Phase Log Log Vector Type Slide Rule. This 10 inch Slide Rule is of particular value to Electrical Engineers. It is adjustable and has a wide vision indicator and is supplied in a leather case . . .
- 7112B3 Duo Phase Log Log Trigonometrical
 Decimal Type Slide Rule, same as No.
 7112B2 but with Trigonometrical
 Scales divided to read to Degrees and
 Decimals of a Degree......
- 7112B4 Cursor for No. 7112A1 Slide Rule.
- 7112B5 Cursor for No. 7112A2 Slide Rule.
- 7112B6 Cursor for No. 7112A3 Slide Rule.
- 7112B7 Cursor for No. 7112B1 Slide Rule.
- 7112B8 Cursor for No. 7112B2 Slide Rule.
- 7112B9 Cursor for No. 7112B3 Slide Rule.





ELLIOTT-VEMCO DRAFTING MACHINES



NO FINER, SMOOTHER WORKING MACHINE AVAILABLE

Built for Engineers by Engineers to produce the most efficient, accurate and flexible Drafting Machine. Embodying features never before found in any other machine.

Elliott-Vemco Drafting Machines eliminate the separate handling of protractors, r squares, triangles and scales, which is essential to modern high-speed production with accuracy.

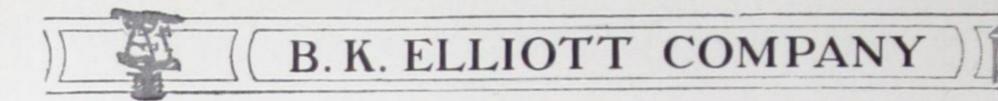
Elliott-Vemco Drafting Machines enable you to increase capacity up to 40% vithout adding to the personnel of your present department.

Every effort has been put forth to make the Elliott-Vemco Drafting Machine versatile in operation yet durable and simple in construction. Bearings are sealed against dirt and dust and permanently lubricated, assuring constant accurate performance.

Made in three sizes to fit almost any board or table. The Standard 24-inch arm nachine will cover up to 36×72 -inch table, the 30-inch for tables up to 42×84 or 48×72 , while the 36-inch arm machine will cover a table up to 48×120 inches.

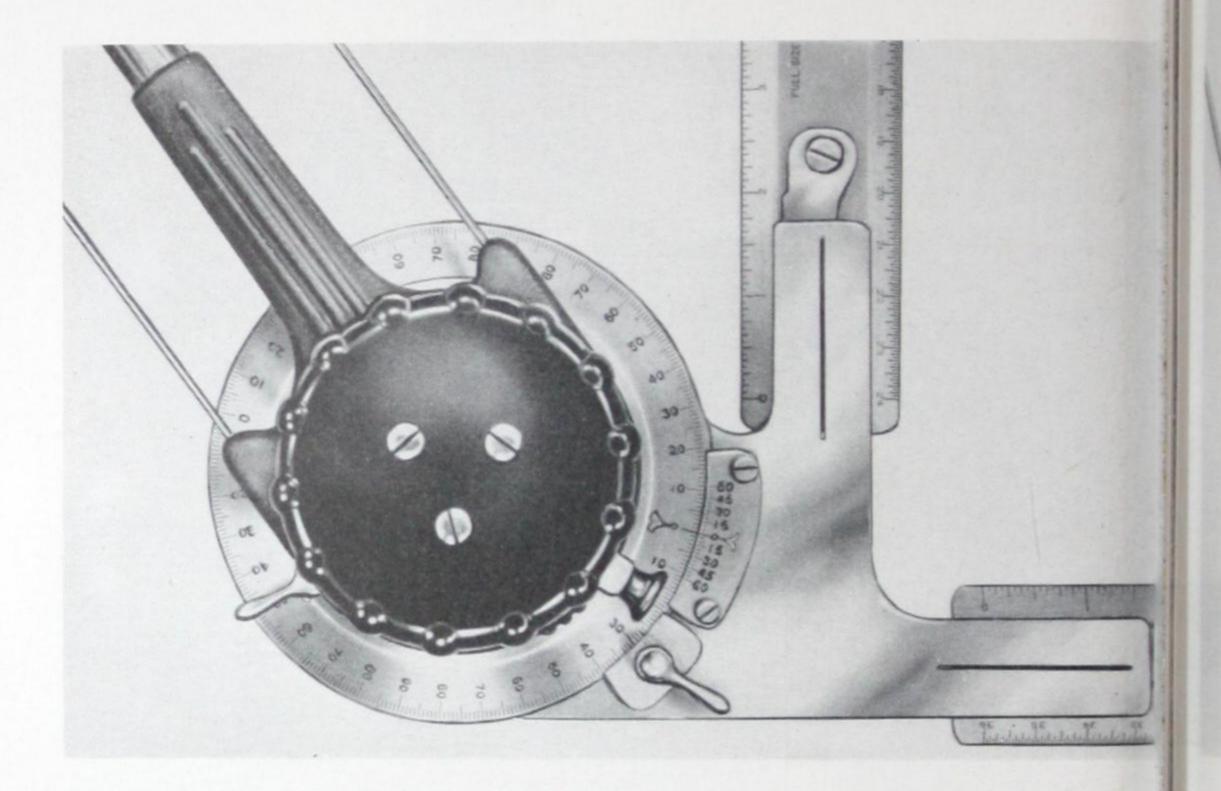
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ELLIOTT-VEMCO DRAFTING MACHINES

STANDARD MACHINE



The Large Protractor on Elliott-Vemco Machines is 4¾ inches in diameter. Engine divided to 1 degree, a double vernier reads to 5 minutes, single row figures by quadrants. The graduations are of such width as to provide an optimum balance of accuracy and ease of reading.

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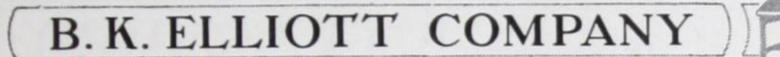
The zero reading on the machine can be set quickly and accurately for a base-line of any orientation. The automatic indexing mechanism positively locks the protractor at any 15 degree position in the entire circle. This provides a FULL BASE LINE SETTING so that angles can readily be set off from a line in any direction.

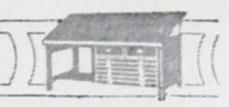
A simple movement of the thumb piece disengages the automatic indexing mechanism for setting intermediate angles.

71141 Elliott-Vemco Standard Drafting Machine, 24-inch arms.
71142 Elliott-Vemco Standard Drafting Machine, 30-inch arms.
71143 Elliott-Vemco Standard Drafting Machine, 36-inch arms.

See Price List Inside Back Cover

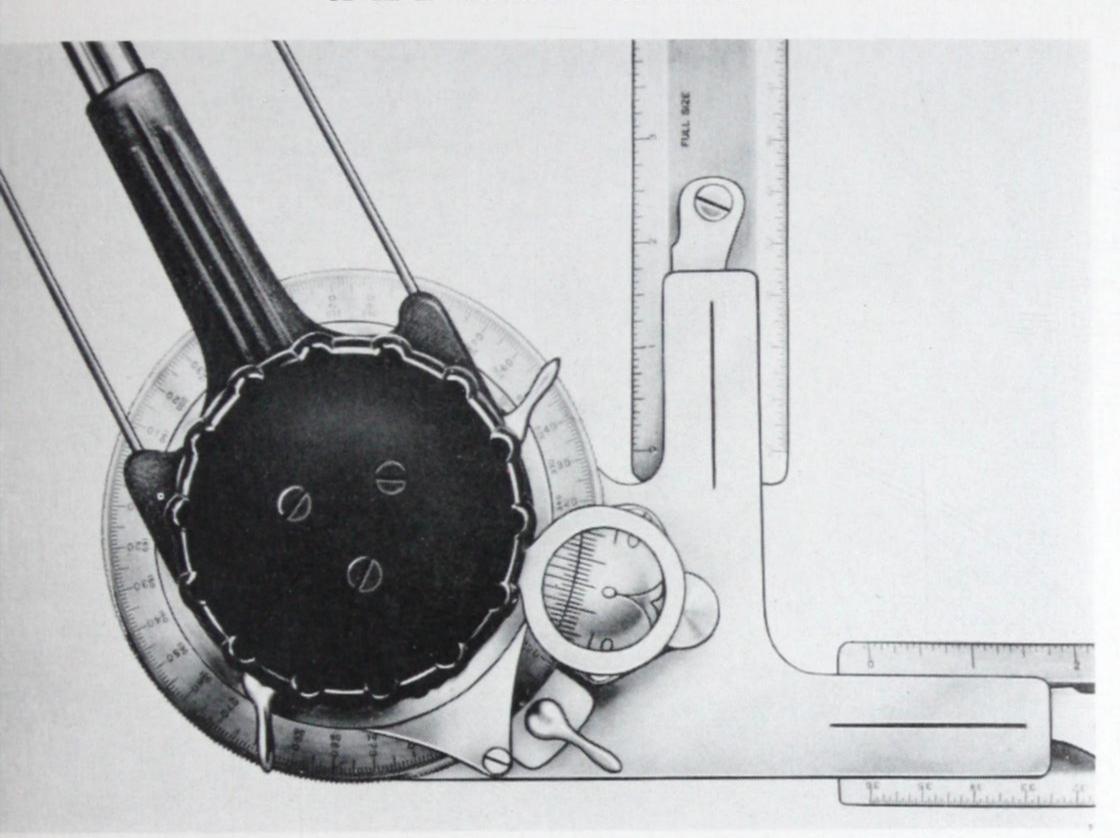
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ELLIOTT-VEMCO DRAFTING MACHINES

CIVIL ENGINEER'S MACHINE



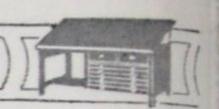
The protractor is divided to ½ degree; a double vernier reads to 1 minute; two rows of figures—one by quadrants, one from 0 to 360 degrees. Three clamps provide the following combinations: (1) Protractor can be clamped in any orientation while the protractor arm is free to be rotated, either directly or by means of the micrometer screw; (2) Protractor arm can be clamped in any orientation while the protractor is rotated by means of the micrometer screw; (3) Both protractor and arm can be rotated together and clamped in any orientation. This construction enables the engineer to plot accurately traverses or side shots; either by deflection angles, bearings, or azimuths; moreover, the engineer has a choice of several methods of operation. This machine can also be used to advantage in making the preliminary lay-out of a triangulation net. In a general way, it may be said that the machine repeats on the drafting table the motions of the transit in the field, the edge of a scale taking the place of the line of collimation.

Other features included in all Elliott-Vemco Machines: Strong table clamp, operated by a single large screw. Positive scale holder. Large drafting head handle, ridged for a firm, comfortable grip. Superior wingnuts which keep out dust, hold in lubricant.

See Price List Inside Back Cover

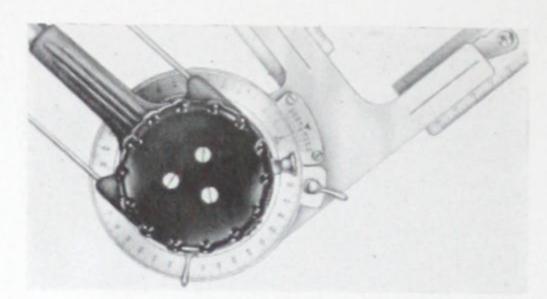
man PAGE 115 Johnson



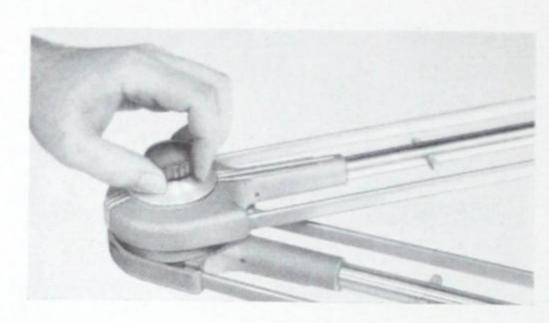


ELLIOTT-VEMCO DRAFTING MACHINES

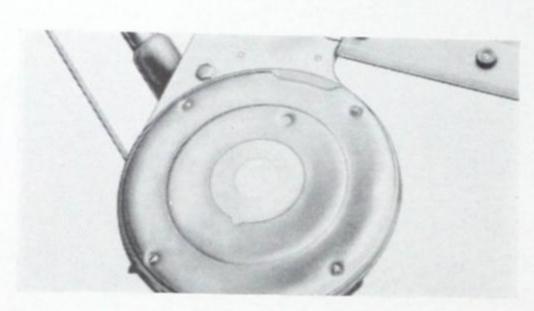
FEATURES THAT MAKE ELLIOTT-VEMCO MACHINES OUTSTANDING



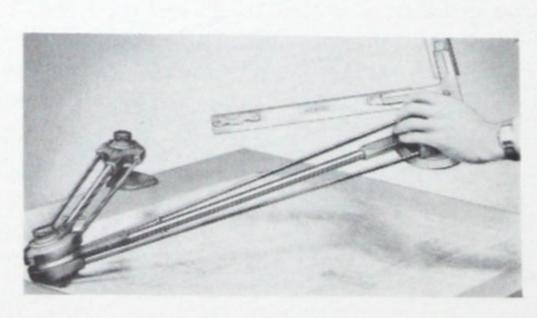
Full Circle Base-Line Setting: The zero reading on the machine can be set quickly and accurately for a base-line of any orientation. Automatic indexing can be employed for setting off angles directly from the base-line at 15-degree intervals, or the automatic indexing can be disengaged and intermediate angles can be set off from the base-line.



Smooth Elbow Brake: The machine can be adjusted readily to prevent sliding on an inclined table by means of a thumb-screw at the elbow. Braking action is afforded by large discs of high-quality brake lining. A similar brake at the support increases the braking action when the table is more steeply inclined.



Central Skid Button: The drafting head is supported by a large, centrally-positioned skid button about which the protractor arm can be rotated smoothly without any drag or tendency toward eccentric motion. This skid button is of a high-grade plastic that will not mar the drawing paper, and can be furnished to accommodate scales and straight edges of different thicknesses.



Flexibility: Each of the tubular arms is so articulated with the brackets at either end that the drafting head adjusts itself to irregularities in the drawing surface and the scales always lie flat. Moreover, the scales can easily be lifted over the edges of the drawing paper mounted on the board.

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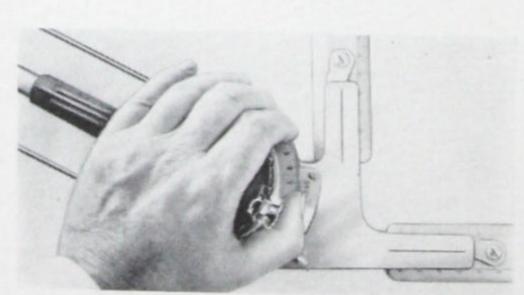
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71172

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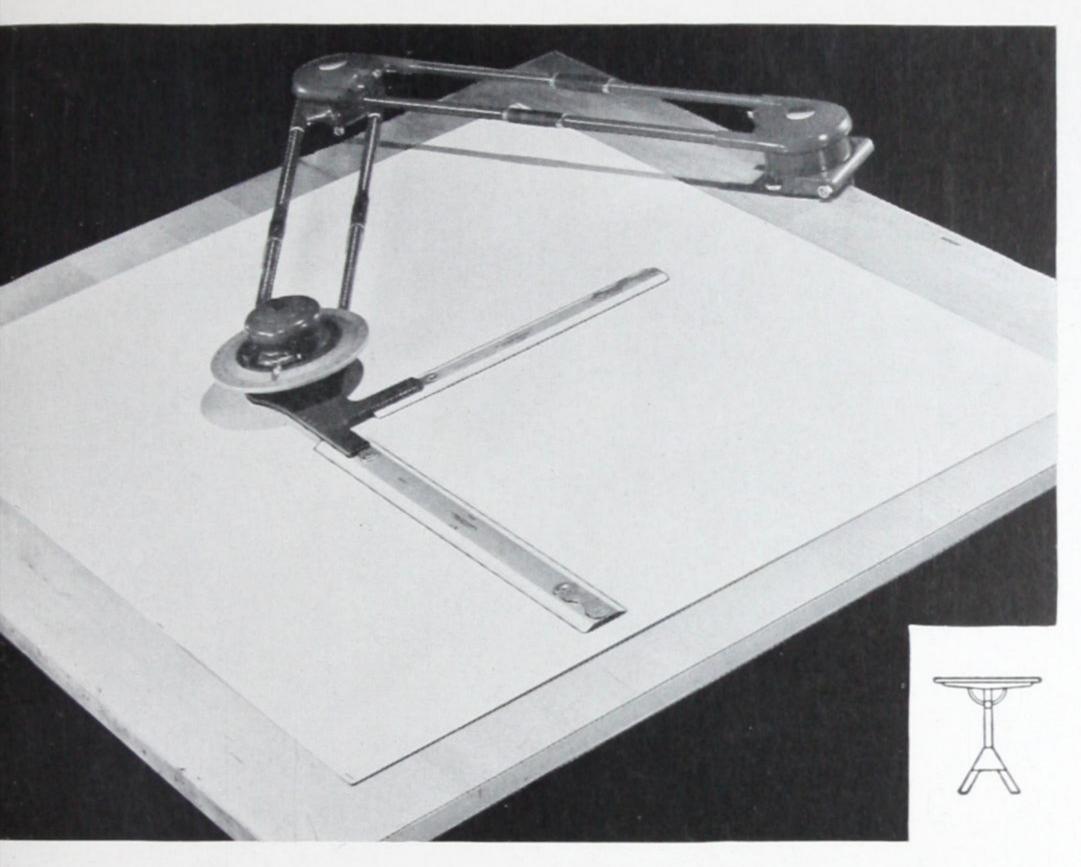


Convenient Indexing: Indexing is controlled by a thumb-piece conveniently located in the handle. The automatic indexing mechanism positively locks the protractor arm at any of the 15-degree positions in the entire circle. A simple movement of the thumb-piece disengages the automatic indexing mechanism and facilitates the setting of intermediate angles.





NIVERSAL BOARDMASTER DRAFTING MACHINES



71171

Universal Boardmaster Drafting Machines are built for greater accuracy and gidity through the use of finer and longer-lasting material.

They are Modern, Rugged and Efficient.

Made in two sizes, 24-inch and 30-inch arms, to cover a wide range of board sizes.

The Boardmaster can be used on horizontal, sloping or vertical boards by merely dding Cartridge-type Stabilizers (page 118) or the Spring Counter Balance (page 119) the above machine.

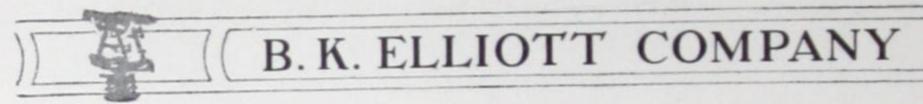
EACH

- 1171 Boardmaster Drafting Machine, 24-inch arms.....
- 1172 Boardmaster Drafting Machine, 30-inch arms.....

A special catalog of these machines mailed upon request

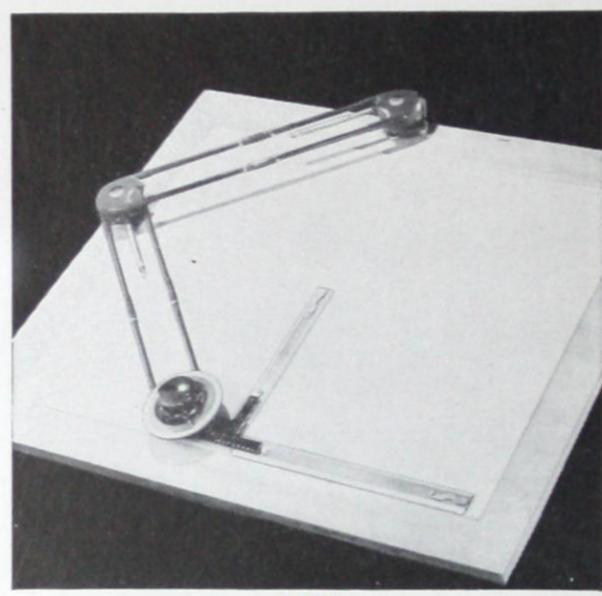
See Price List Inside Back Cover

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UNIVERSAL BOARDMASTER DRAFTING MACHINES



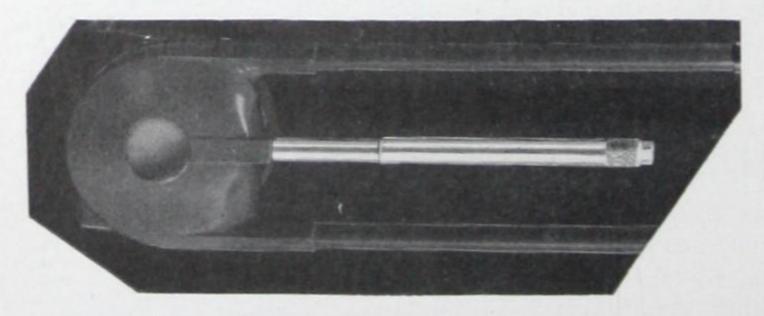


71181

The Universal Boardmaster can be used on sloping boards by merely attaching the cleverly designed cartridge-type stabilizers.

Two cartridge styles are available: No. 1 for use on upper arm, No. 2 for use on lower arm. When applied to any standard 24-inch Boardmaster, powerful, adjustable springs correctly balance the arms in all positions up to 20° board angle. Slightly smaller angle on 30-inch machines.

71181 Boardmaster, 24-inch arms, with one cartridge for boards inclined up to 10°
71182 Boardmaster, 24-inch arms, with two cartridges, for boards inclined up to 20°.
71183 Boardmaster, 30-inch arms, with one cartridge, for boards inclined up to 8°.
71184 Boardmaster, 30-inch arms, with two cartridges, for boards inclined up to 16°.
71185 Cartridge Stabilizer for use on upper arm on 24-inch or 30-inch arm machine.
71186 Cartridge Stabilizer for use on lower arm on 24-inch or 30-inch arm machine.



Cartridge-type Stabilizer Illustrated

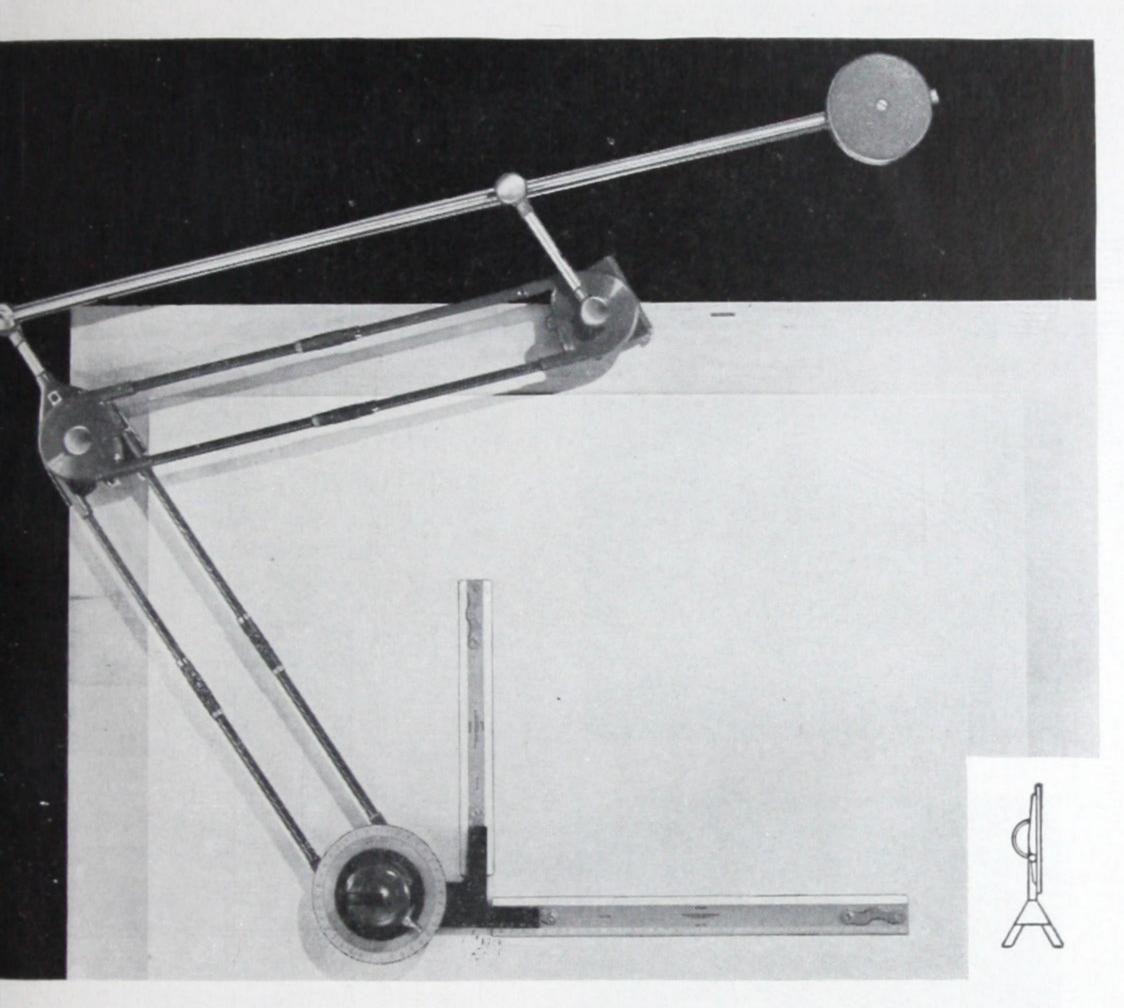
A special catalogue on these machines mailed upon request.

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INIVERSAL BOARDMASTER DRAFTING MACHINES



71191

UNIVERSAL BOARDMASTER WITH WEIGHT-STABILIZER For Board Angles Up To Vertical

A rugged, durable attachment, readily applied to any Boardmaster, provides correct, frictionless balancing at all board angles from horizontal to vertical, automatically.

Ideal for use on modern, adjustable type, vertical boards. Available in two sizes, for use on 24-inch or 30-inch machines.

EACH

71191 Boardmaster Drafting Machine, 24-inch arms, with Weight Stabilizer...
71192 Boardmaster Drafting Machine, 30-inch arms, with Weight Stabilizer...
71193 Weight Stabilizer for 24-inch arm Boardmaster......

A special catalog on these machines mailed upon request

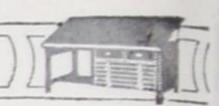
Weight Stabilizer for 30-inch arm Boardmaster

71194

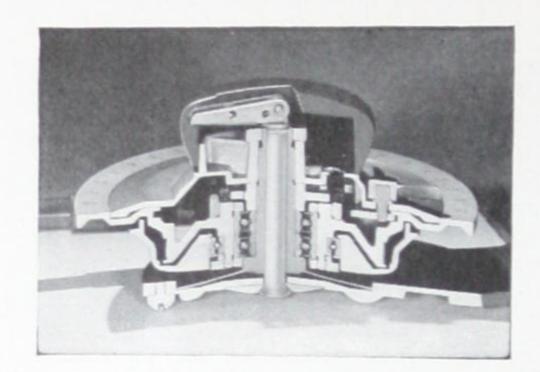
See Price List Inside Back Cover

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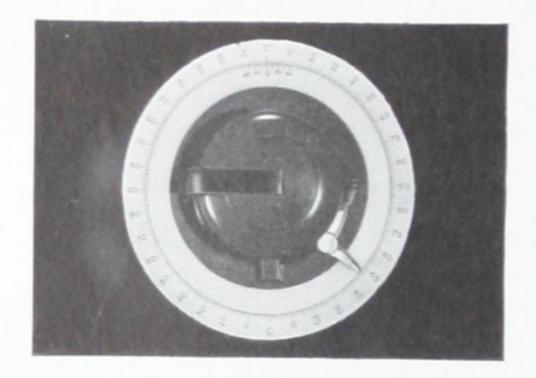


UNIVERSAL BOARDMASTER DRAFTING MACHINES



CONSTRUCTION FEATURES

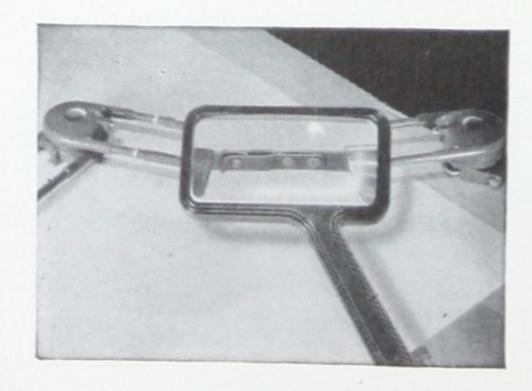
Rugged Construction—Improved indexing and clamping with fewer, stronger parts. Heavy vertical cross-sections. Matched, pre-loaded, sealed precision ball bearings.



Full Visibility—Overarm construction for complete 360° visibility of 5¼-inch diameter protractor dial and vernier. All controls are located above the arm, allowing absolute lefthand control of all operations.



Ground Index Rings—Hardened steel Index Rings, ground to gauge tolerances, combined with an automatic take-up to compensate for wear, mean longer machine life and finer angular accuracy.



Replaceable Fully-Enclosed Bands—Bands are completely enclosed for maximum protection, yet are easily replaced by threading through each half of the rigid strut and snapping the ends together. The bands ride on Diamond Turned Pulleys—accurately turned, internally braced pulleys guarantee lasting parallelism.

A special catalog on these machines mailed upon request



DRAFTING MACHINE SCALES

ELLIOTT-VEMCO METAL SCALES

Elliott-Vemco Metal Scales are formed from hard aluminum sheet and possess great rigidity, while at the same time they are of unusually light weight. Moreover, only the edges touch the drawing surface and there is practically no tendency to grind dirt into the drawing. A satin finish, made permanent by anodizing, is of such grain as to eliminate annoying glare. All scales are full divided.



71221

UNIVERSAL METAL SCALES

Aluminum Alloy Scales: Durable, glareless, machine-divided and finished in a new super-tough anodized coating that is clean, hard and permanent.



712213

BOXWOOD WHITE EDGE SCALES

712225 Plastic Edged Boxwood Scales: Well seasoned, machine-divided for accuracy, with black graduations on white background for easy reading.

TRANSPARENT PLASTIC SCALES

712237 Fully Transparent plastic. Engine divided graduations on bottom of scale, to avoid parallax errors.

STRAIGHT EDGES

Elliott-Vemco Straight Edges are formed of the same hard aluminum sheet as the Elliott-Vemco Scales. Satin finish. Both edges are beveled. Two chuck plates.

Universal Metal Straight Edges are similar to their scales in construction. One chuck plate.

Maple Blade, Transparent Edges, Straight Edges. One chuck plate, not beveled.

Bakelite Blade, Clear Plastic edges. One chuck plate, not beveled.



712249





36" LENGTH

SCALES FOR DRAFTING MACHINES

		712201 712202 712203 712204 712206 712207 712209 712210 712210	METAL 712213 712214 712215 712216 712218 712220 712221 712222	WHITE EDGE 712225 712226 712226 712228 712229 712230 712233 712233 712233 712233	TRANSPARENT PLASTIC 712237 712238 712240 712241 712243 712244 712245 712245 712246
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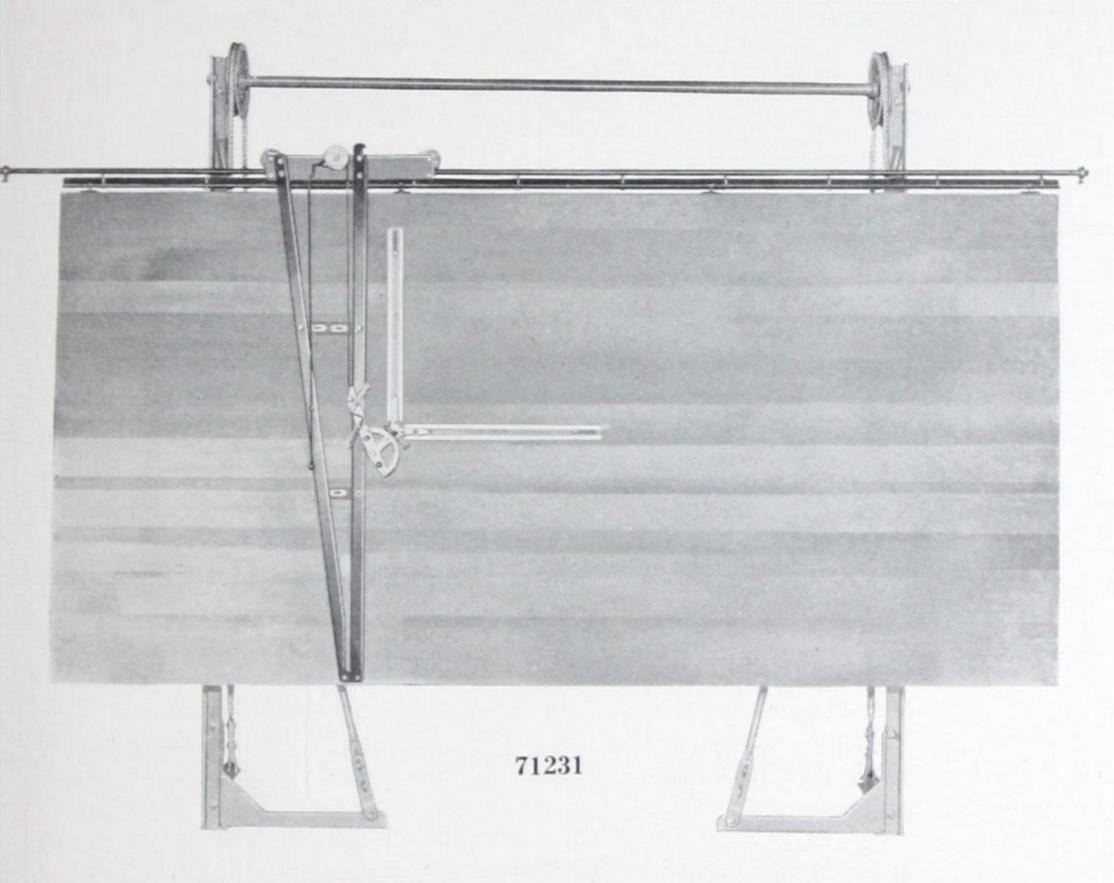
STRAIGHT EDGES

		12" LENGTH	18" LENGTH	24" LENGTH
112249	Aluminum Alloy, Universal EACH			
112250	Aluminum Alloy, Vemco EACH			
712251	Maple Blade, Transparent Edge EACH			
712252	Black Plastic, Transparent Edge EACH			





"EMMERT" STAINLESS STEEL DRAFTING MACHINES



"Emmert" Drafting Machines are made in sizes to mount on Drawing Boards from 24 inches to 144 inches in width and any length.

Made to travel horizontally on a stainless steel track mounted on top of board the protractor head and scales are readily adjusted vertically on the reinforced blade.

The "Emmert" Drafting Machine is ideal when laying out or making full size details of large units where large boards are used vertically, as the entire board surface can be covered.

The machine is counter balanced throughout assuring perfect performance in any position from horizontal to vertical.

"Emmert" machines can be furnished for mounting on your own board or with board of any required size with or without the adjustable vertical stand as illustrated.

Complete catalog covering "Emmert" Drafting Machines furnished upon request.

71231 Emmert Drafting Machine (Without Scales and Stainless Steel Track).... EACH.

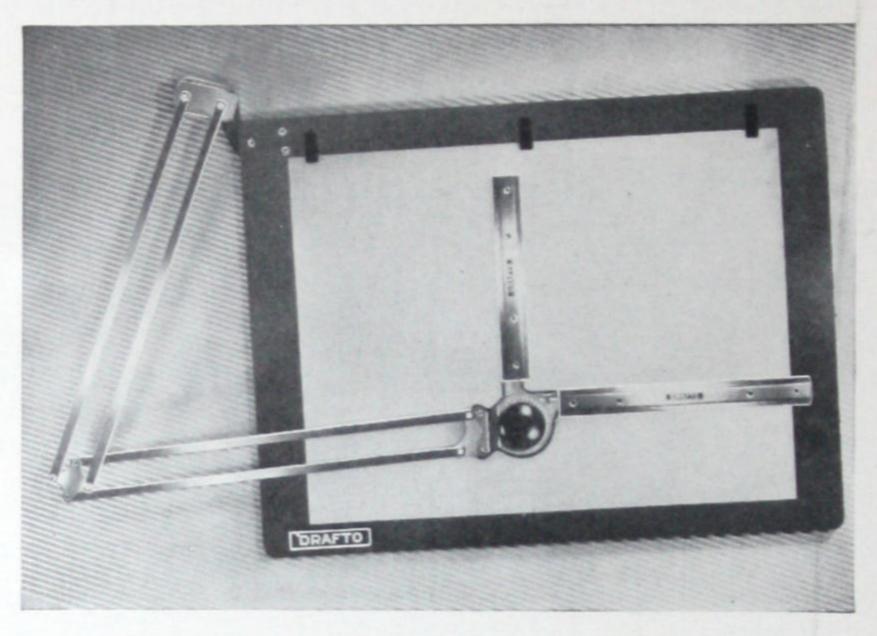
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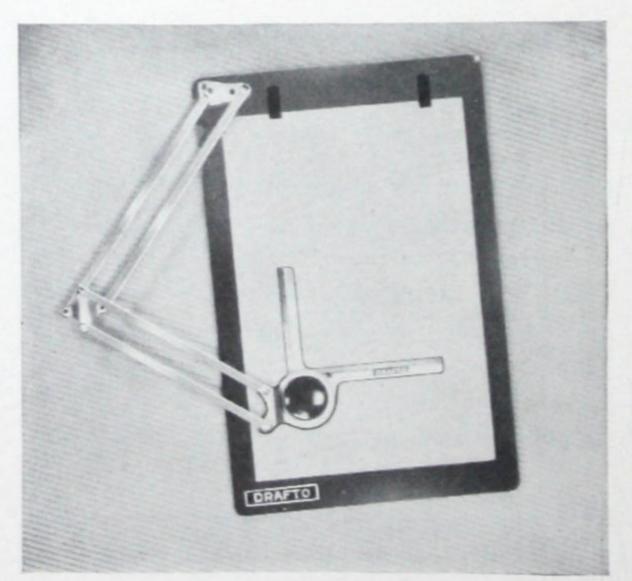


DRAFTO DRAWING MACHINE



71254

In modern drafting rooms the Drafting Machine is standard equipment. It has proved its advantage over the obsolete T-square and triangle by giving the freedom of thought and action and the speed engineering service needs to meet the demands of modern competition.



Drafto is a complete drawing machine giving these advantages in a compact and Portable unit. Drafto is just as sturdy and serviceable a tool as the modern portable typewriter. In making it compact and portable no essential feature of the larger, permanently located drafting machine has been sacrificed.

1155

11257

11258 11259

71251

7151

Drafto is a handy, time-saving tool for engineers, architects, students, salesmen, executives, any one whose work or study requires the making of drawings or sketches quickly. Drafto can be carried with you wherever you go, enabling you to make drawings of your ideas on the job. There's a size for every need.

71253

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EACH

DRAFTO

COMPACT and STURDY

IZE No.

PORTABLE DRAWING MACHINES

A SIZE FOR **EVERY NEED**

Drafto operates smoothly and easily. All you need is a pencil and a compass; o scales, no triangles, no T-square, no thumb tacks. The scales reach all portions of he paper. The paper clamps hold securely either a single sheet or a pad. The Drafto nechanism is mounted on a light-weight, sturdy, tempered Masonite board selected because it provides a hard and uniformly smooth support. All edges are rounded. Orafto has been expertly designed. Parts are manufactured and assembled by precision nethods. Steel arms have an oxidized finish and the protractor and scales a flat silver inish that sets off sharply the black and deeply etched graduations.

The integral scales are made in one piece and permanently attached to the proractor. Protractor is graduated to 2° and the graduations are deep and clear. Setting it s a simple and natural operation. The clamping device produces equal locking tension t all angles and prevents slippage that might spoil a partly-finished drawing. Both cales can be moved 180°, a complete half-rotation, an invaluable feature in making ngular divisions of a circle or other figure. Because the two scales are made in one siece, they are never out of square with each other.

The vertical scale is 4" long and the horizontal 5". Longer detachable scales can be urnished that can be quickly mounted on the shorter integral scales.

DESCRIPTION

1251	(10-H)	Takes 9" x 12" sheets
1252	(15-H)	Takes 10" x 15" sheets
1253	(15-V)	Takes 10" x 15" sheets
1254	(20-H-6-8)	Takes 12" x 18" sheets; with 6" and 8" detachable scales
1255	(20-V-6-8)	Takes 12" x 18" sheets; with 6" and 8" detachable scales
1256	(20-U-6-8)	Unmounted—without board or paper clamps; with 6" and
		8" detachable scales
1257	(20-WH-6-8)	Takes 12" x 18" sheets, on wooden board, 6" and 8" detach-
		able scales
1258	(25-H-8-10)	Takes 15" x 20" sheets; with 8" and 10" detachable scales
1259	(25-U-8-10)	Unmounted—without board or paper clamps; with mount-
		ing bracket and 8" and 10" detachable scales
12510	(25-C-8-12)	Takes 18" x 24" sheets; mounted on wood board; with 8"
		and 12" detachable scales
12511	(25-CU-8-12)	Unmounted—without board; with mounting bracket and
		8" and 12" detachable scales

SCALES AVAILABLE IN 4 STYLES

 $\frac{1}{8} - \frac{1}{4} - \frac{1}{2} - 1$ in. to the foot. Half and full size.

10 x 50 Parts to the Inch. MM and Half MM.

Inking Edges

6".....

(with clips) Each

Detachable Scales Transparent Celluloid (with clips) EACH 6"..... 712516 12513 712517 10" 12514 12515

Descriptive pamphlet sent on request

NOTE—Numbers shown in (—) represent manufacturer's numbers

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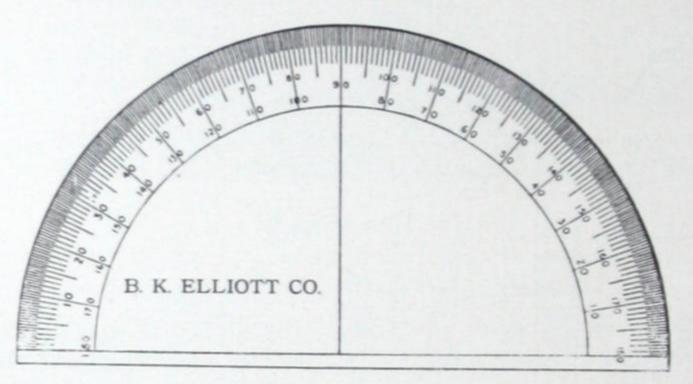


TRANSPARENT AMBER PROTRACTORS

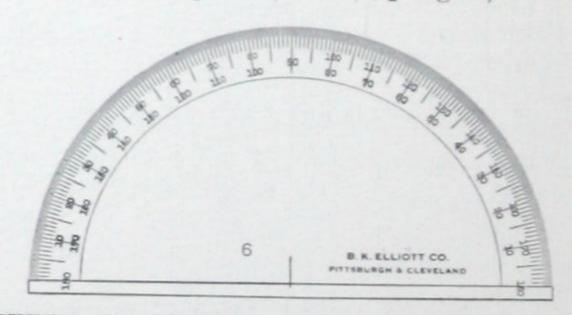
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		LACI
712601	Celluloid Ruler and Scale Protractor, 10 x 50 scales	
712602	Celluloid Ruler and Scale Protractor, 10 x 20 scales	
712603	Celluloid Ruler and Scale Protractor, 30 x 40 scales	(3-10)
712604	Celluloid Ruler and Scale Protractor, inch and metric scales	
712605	Celluloid Ruler and Scale Protractor, inch and tenth scales	
712606	Celluloid Ruler and Scale Protractor, 1/4, 1/8, 1/9 and 1-inch scales	

Made of Transparent celluloid, 6 inches in length; combines scale and protractor advantages; lines can be drawn at any desired angle or parallel to each other without measuring. An inexpensive and useful protractor for architects, engineers and surveyors. Excellent for recording notes in field, transit or level books when making surveys.



	EACH	H
712607	Celluloid Protractor, transparent, half circle, ½-degree, 4"	
712608	Celluloid Protractor, transparent, half circle, ½-degree, 5"	
712609	Celluloid Protractor, transparent, half circle, ½-degree, 6"	
712610	Celluloid Protractor, transparent, half circle, ½-degree, 7"	
712611	Celluloid Protractor, transparent, half circle, ½-degree, 8"	
712612	Celluloid Protractor, transparent, half circle, 72-degree, 8	
712612	Celluloid Protractor, transparent, half circle, ½-degree, 9"	
112015	Celluloid Protractor, transparent, circle, 1/2-degree, 6"	



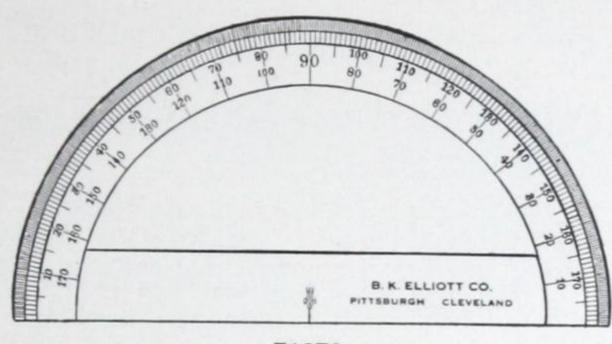
EXTRA THICKNESS, APPROXIMATELY .090

719614	EACH
712014	Semicircular Celluloid Protractor, 6", beveled edge, ½-degree
112010	Definitional Cellifold Protractor X" heyeled edge 1/-degree
712616	Circular Celluloid Protractor, 6", beveled edge, ½-degree
719617	Circular Cellulaid Protractor, 6, beveled edge, 2-degree
112011	Circular Celluloid Protractor, 8" beveled edge 1/2-degree
712618	Circular Celluloid Protractor, 10", beveled edge, 1/2-degree





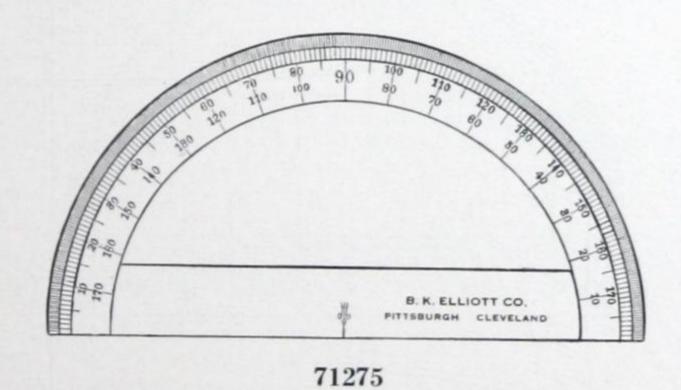
BRASS PROTRACTORS



71273

71271 Semicircular, Brass, 3½-inch diameter, 1 degree.
71272 Semicircular, Brass, 4¼-inch diameter, 1 degree.
71273 Semicircular, Brass, 5-inch diameter, ½ degree.
71274 Semicircular, Brass, 6-inch diameter, ½ degree.

GERMAN SILVER PROTRACTORS



71275 Semicircular, German Silver, 5-inch diameter, ½ degree.....

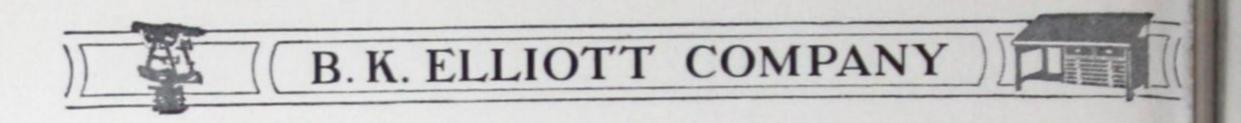
71276

71277

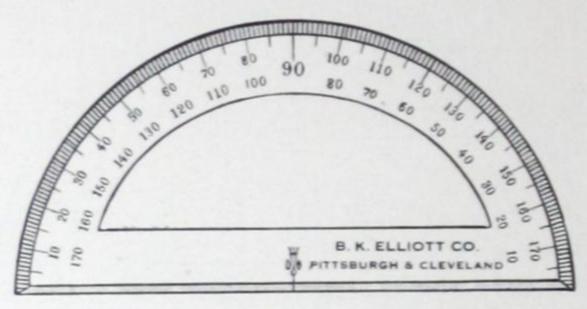
71278 Semicircular, German Silver, 8-inch diameter, ½ degree.....

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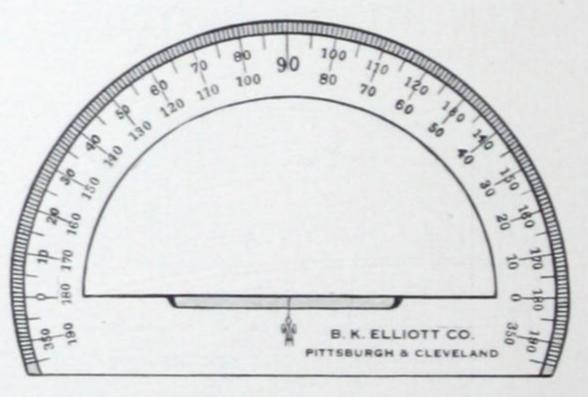
GERMAN SILVER PROTRACTORS



71281

Center on Outer Edge

	LACH
71281	Semicircular, German Silver, 4 inches, beveled edge, 1 degree
71282	Semicircular, German Silver, 5 inches, beveled edge, ½ degree
71283	Semicircular, German Silver, 6 inches, beveled edge, ¼ degree
71284	Semicircular, German Silver, 8 inches, beveled edge, ½ degree



71285

Center on Inner Edge

	EACH
71285	Semicircular, German Silver, 4 inches, beveled edge, 1 degree
71286	Semicircular, German Silver, 5 inches, beveled edge, ½ degree
71287	Semicircular, German Silver, 6 inches, beveled edge, ½ degree
71288	Semicircular, German Silver, 6 inches, beveled edge, ¼ degree

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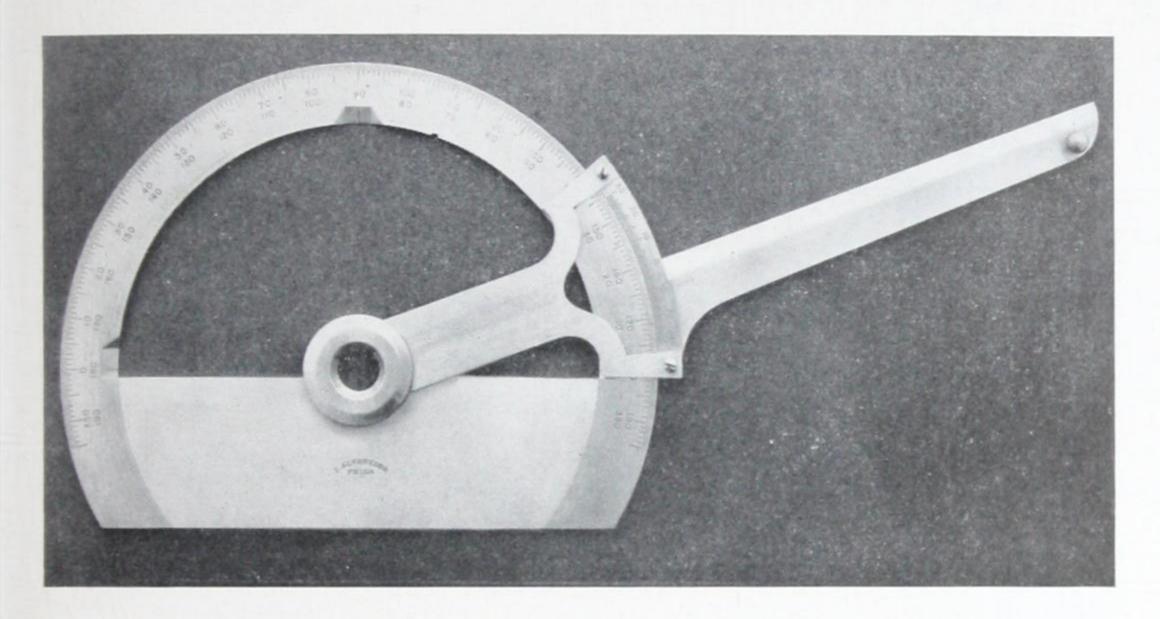
mono Page 128 Johnson





METAL PROTRACTORS

Made of Nickel Silver Chromium Plated



71291

71291 6-inch nickel silver half circle protractor graduated to ½° with arm and vernier reading to 3 minutes. Furnished in leatherette covered case

71292 8-inch nickel silver half circle protractor graduated to ½° with arm and vernier reading to 1 minute. Furnished in leatherette covered case.....

71293 8-inch nickel silver whole circle protractor graduated to ½° with arm and vernier reading to 1 minute. Furnished in leatherette covered case....

71295 8-inch nickel silver whole circle protractor graduated to ½° with arm and vernier reading to 1 minute with micrometer adjustment. Furnished in leatherette covered case.....





EACH

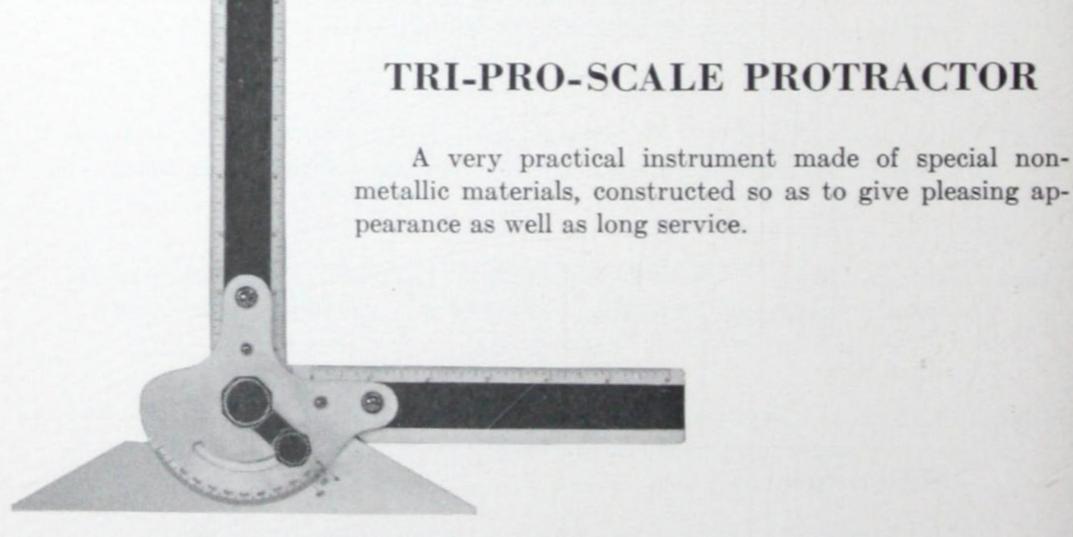
UNIVERSAL ADJUSTABLE PROTRACTOR TRIANGLE



This new adjustable protractor triangle, stout transparent celluloid body (.08" thick) with self-centered ivory grained celluloid protractor. The nickel plated knob locks the protractor in any position, which provides rigidity and greatly facilitates easy handling of the instrument. The protractor is engine divided to half degrees making accurate gauging of "Minute" settings easy.

The instrument combines all angles and protractors into one.

71391



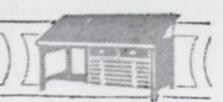
71304

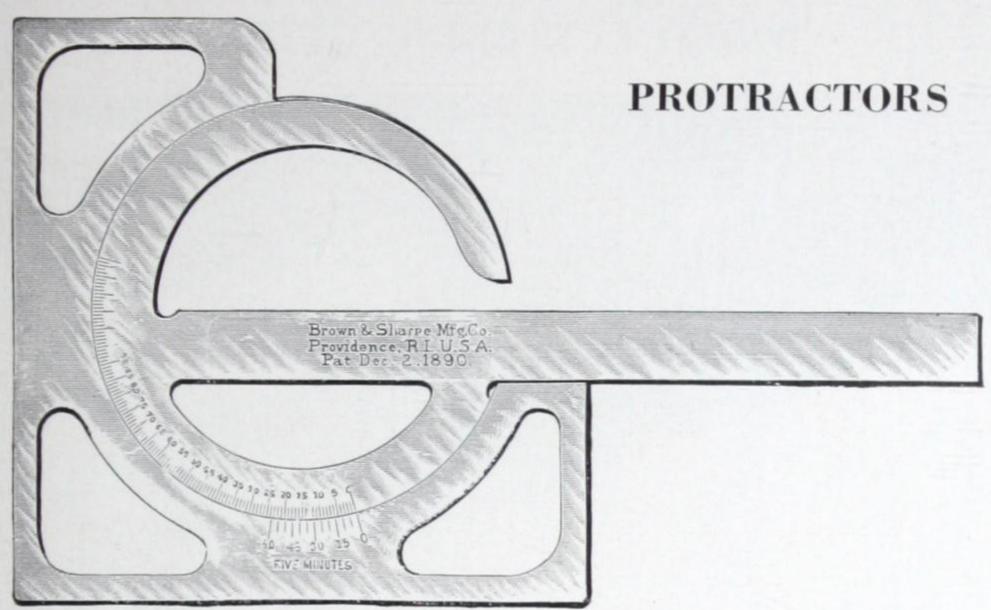
Extra scales can be furnished if desired

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71311

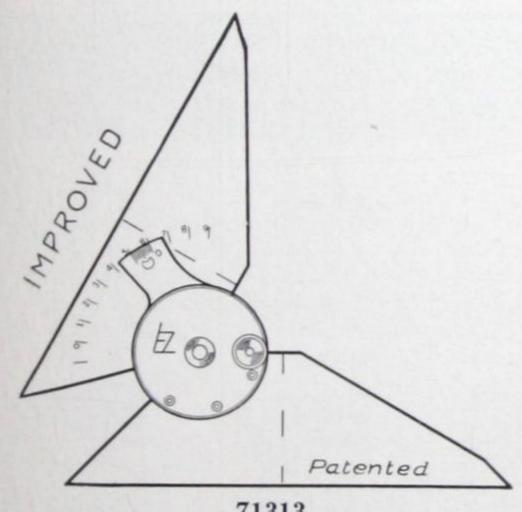
EACH

71311 Draftsman's Steel Protractor, with directions.....

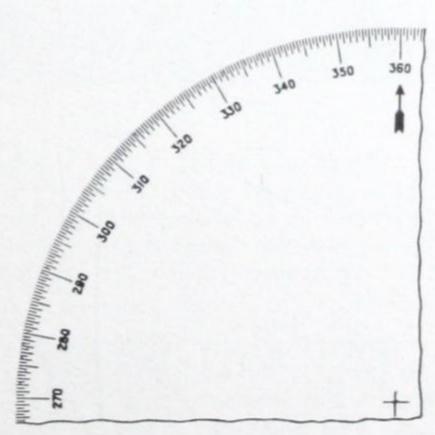
71312 Draftsman's Steel Protractor, in morocco case.....

This Protractor is made from sheet steel and has a blade 8½ inches long. The graduations read to degrees and the vernier reads to five minutes.

There are no projections on either face of the Protractor and consequently it can be used on either edge of the blade or either side up. This makes it particularly convenient in dividing circles, transferring angles, drawing oblique lines at right angles to each other, or laying off given angles each side of a vertical or horizontal line without changing the setting.



71313



71316 Numbered 0-360

Lesh Angle Protractor, made of heavy transparent celluloid. With vernier and clamp.

Lesh Angle Protractor 7 inches..... 71313 71314 71315 71316

Circular Protractor on bristol board, 8-in. diameter, ½° numbered.....

Circular Protractor on bristol board, 14-in. diameter, ¼° numbered.....

Circular Protractor on drawing paper, 8-in. diameter, ½°, numbered.....

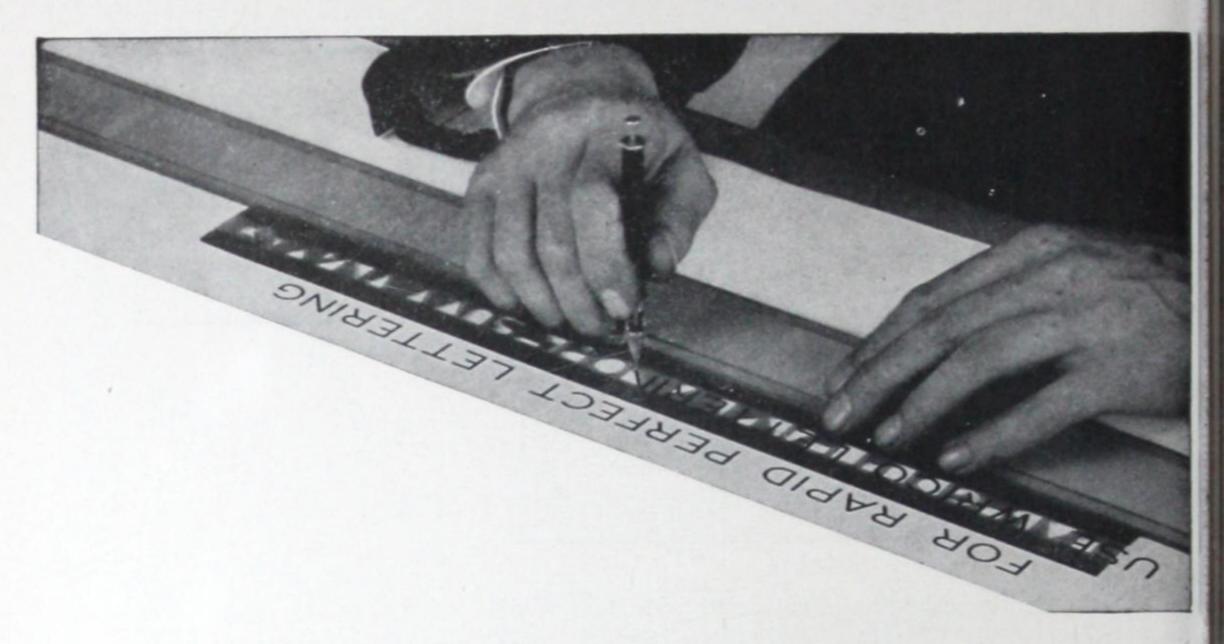
Circular Protractor on drawing paper, 14-in. diameter, ½°, numbered..... 71317 71318

71319





WRICO LETTERING GUIDES



Wrico Lettering Guides Will Produce Perfect Lettering With Less Effort and Greater Speed Than Any Other Lettering Device

To use WRICO Lettering Guides effectively requires neither skill nor previous experience. No preliminary adjustments are necessary before the lettering can be done. The WRICO Lettering Pen is not a machine. It is a PEN that is held in the hand and used in an easy and natural position.

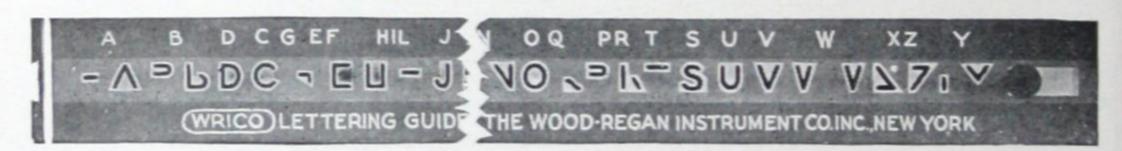
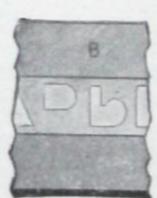


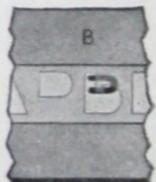
Fig. 1

As shown in Fig. 1, the Guides are grooved on the under side so that the ink will not be smeared when the Guide is moved from one character to another. The Guide is placed directly over that portion of the paper on which the lettering is to be done. This prevents distortion of the characters. Each opening in the Guides is cut with extreme accuracy with the result that every letter, numeral or other symbol made is perfect.

Taking the letter "B" as a typical example, Fig. 2 shows the two openings used. After making the part shown in Fig. 3, the shift button is pressed to the paper and the guide







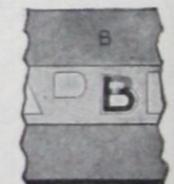


Fig. 2

Fig. 3

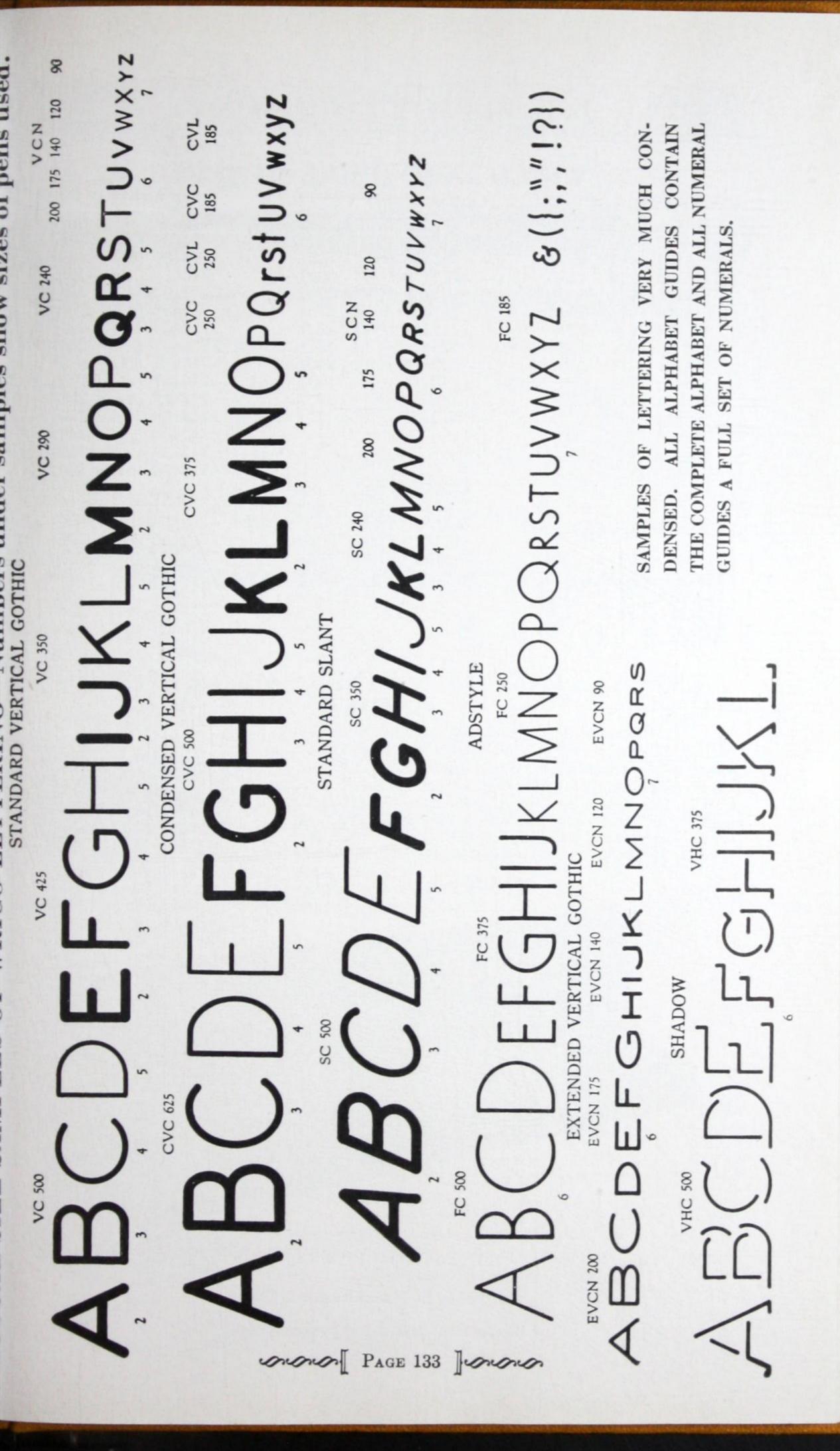
Fig. 4 Fig. 5

shifted to the right as far as the button will permit—which is the position shown in Fig. 4. The letter is then completed as in Fig. 5.

The Guides consist of a strip of well seasoned, transparent celluloid, with openings for all letters and numbers. The Wrico pens, made special for this work, are moved in contact with the sides of the opening to form letters. A shift button is inserted in one end to allow correct formation of the characters.

See Price List Inside Back Cover

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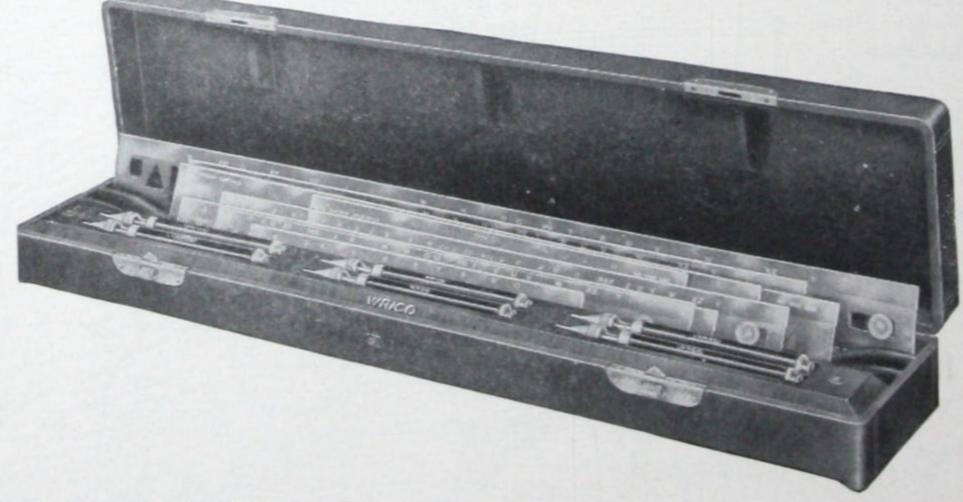
WRICO INDIVIDUAL GUIDES

WILLIAM.	, IIIII I III CILLI C.	
STANDARD VERTICAL	CONDENSED VERTICAL	STANDARD SLANT
713401 (VC 500)	713416 (CVC 625)	713428 (SC 500)
713402 (VN 500)	713417 (CVN 625)	713429 (SN 500)
713403 (VC 425)	713418 (CVC 500)	713430 (SC 425)
713404 (VN 425)	713419 (CVN 500)	713431 (SN 425)
713405 (VC 350)	713420 (CVC 375)	713432 (SC 350)
713406 (VN 350)	713421 (CVN 375)	713433 (SN 350)
713407 (VC 290)	713422 (CVC 250)	
713408 (VN 290)	713423 (CVL 250)	713435 (SN 290)
	713424 (CVN 250)	
713410 (VN 240)	713425 (CVC 185)	713437 (SN 240)
713411 (VCN 200)	713426 (CVL 185)	713438 (SCN 200)
713412 (VCN 175)	713427 (CVN 185)	713439 (SCN 175)
713413 (VCN 140)	(0,11,10)	713440 (SCN 140)
713414 (VCN 120)	CHIPOW	
713415 (VCN 90)	SHADOW	713442 (SCN 90)
110110 (1011 00)	713448 (VHC 500)	
	713448 (VHC 500) 713449 (VHN 500)	ADSTYLE
EXTENDED VERTICAL		713453 (FC 500)
EXTENDED VERTICAL	713451 (VHN 375)	
713443 (EVCN 200)		
713444 (EVCN 175)		713456 (FN 375)
713445 (EVCN 140)		713457 (FC 250)
713446 (EVCN 120)		713458 (FN 250)
713447 (EVCN 90)		713459 (FC 185)
.1011. (2.1.02.		713460 (FN 185)

EXPLANATION OF NUMBERS OF LETTERING GUIDES

VCN	90 stands for Vertical Capitals and Numerals	. Height, .090)"
SCN	175 stands for Slant Capitals and Numerals		
VC	350 stands for Vertical Capitals	. Height, .350)"
SN	500 stands for Slant Numerals	. Height, .500)"
CVC	185 stands for Condensed Vertical Capitals	. Height, .183	5"
CVL	250 stands for Condensed Vertical Lower Case	. Height, .250	0"
CVN	625 stands for Condensed Vertical Numerals	. Height, .62	5"
EVCN	120 stands for Extended Vertical Capitals and Numerals	. Height, .120	0"

BAKELITE CABINET



EACH

713461 Bakelite Cabinet for Wrico Guides 16" x 3½" x 2". Will accomodate six standard pens and eighteen guides.....

See Price List Inside Back Cover

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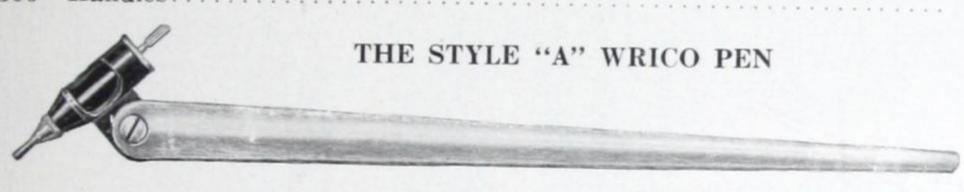






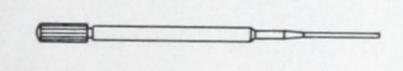


Ferrule	Needle	Plunger	Point
713501	Pens 2, 3, 4, 5, 6 and 7		Еасн









NEEDLE

POINT





713513

SEPERAL HOURS PREFERABLY SYEA

MAY BE REMOVED MINEDIATELY MITH MEN

BIREGAN INSTRUMENT CO. HC-NES

make bottle before used

For those who prefer a pen which is held in the ordinary writing position the Style "A" Pen is equally useful both for lettering with **Wrico** Lettering Guides and for freehand lettering. By means of the pivot bolt connecting the ink cup to the handle, the angle may be quickly adjusted to suit the user.

	EACH
713507	Style "A" Pens 2, 3, 4, 5, 6 and 7, in molded
	Texolite Box with slide cover
713508	Points 2, 3, 4, 5, 6 and 7
713509	Needles 2, 3, 4, 5, 6 and 7
713510	Tension Caps
713511	Ink Cups
713512	Handle with Pivot Belt

WRICO PEN CLEANER

Dry Ink in Wrico Lettering Pens or on any other drafting instrument may be quickly and easily removed with Wrico Pen Cleaner.

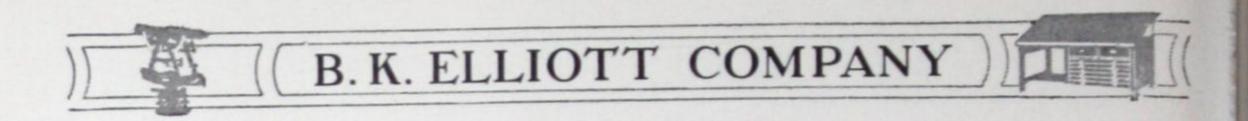
NOTE—Cleaner does not affect enameled, celluloid or rubber handles.

EACH DOZEN

713513 Pen Cleaner, one ounce bottle....
713514 Pen Cleaner, half pint bottle....

See Price List Inside Back Cover

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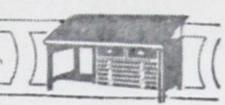
WRICOPRINT)

	-A3GD		
	MADE IN	LETTERING GUIDE NO. VC 1/6 P USE WITH WRICO LETTERING PAD	3.4 QE 5
n	0	0 0 0	. 0 . 0
		WRICO LETTERING PAD No. 12 PATENTS PENDING	

Wricoprint Guides provide an inexpensive means by which anyone, without skill or previous experience, can do uniform perfect lettering, easily and quickly. Each Guide consists of a flat piece of Pyralin, in which openings are cut for characters (as shown in actual size, with the number of the Guide and the size of Wrico Pen used with each Guide.)

Standard Vertical	Standard :	Slant	Adstyle	e
713601 (VC ½ I	713616 (SC	½ P)	713631 (AC	1/4 P)
713602 (VL ½ I	713617 (SL	½ P)	713632 (AL	½ P)
713603 (VN ½.I	713618 (SN	½ P)	713633 (AN	½ P)
713604 (VC 3/8 I	713619 (SC	3/8 P)	713634 (AC	3 P)
713605 (VL 3/8 I	713620 (SL	3/8 P)	713635 (AL	3 P)
713606 (VN 3/8 I	713621 (SN	3/8 P)	713636 (AN	3 P)
713607 (VC 1/4 I	713622 (SC	½ P)	713637 (IC	½ P)
713608 (VL 1/4 I	713623 (SL	½ P)	713638 (IL	1/4 P)
713609 (VN 1/4 I	713624 (SN	½ P)	713639 (IN	1/4 P)
713610 (VC $\frac{3}{16}$ I	713625 (SC	3 P)	713640 (IC	3 P)
713611 (VL 3 16 I	713626 (SL	3 P)	713641 (IL	$\frac{3}{16}$ P)
713612 (VN 3 16 I	713627 (SN	3 P)	713642 (IN	3 P)
713613 (VC 1/8 I	713628 (SC	½ P)		
713614 (VL ½ I	713629 (SL	½ P)		
713615 (VN ½ I	713630 (SN	½ P)		





WRICO BRUSH PENS

Wrico Brush Pens are made in five sizes, designed to fill the need for wide line pens which will not "splash" and will make uniform lines of full density without an excess of ink or water color.

In addition to their obvious advantages for ruling border and other heavy lines,

Brush Pens, sizes A, B, and C are used with the large vertical guides.





CELLULOID

713801	Transparent. Colorless. Sheets size 20" x 50". Thickness	PER	SHEET
	3-1000 of an inch		
	5-1000 of an inch		
	7½-1000 of an inch		
	15-1000 of an inch		
	20-1000 of an inch		
	30-1000 of an inch		
	50-1000 of an inch		
	60-1000 of an inch		
	90-1000 of an inch		
713802	A. B. Finish. (Frosted, semi-transparent.) Sheets size 20" x 50". Surface will take water color, ink, and pencil.		
		PER-	SHEET
	5-1000 of an inch		
	10-1000 of an inch		
	15-1000 of an inch		
	20-1000 of an inch		
	LUMARITH (Cellulose Acetate) Sheets Size 40" x 50"		

Sheets Size 40" x 50"

Can be had in clear or frosted finish

THICKNESS
PER SHEET
713803 10-1000 of an inch.

DRAWING TRACING FILM TRACEFILM

A semi-transparent cellulose acetate sheet for artists and photographers. For diffusing lights, cutting down negative backgrounds, highlighting color flaps, etc. Will not buckle when water or ink is applied.

7135

7139

7139

PROTECTOID

A thin, crystal-clear, transparent wrapping medium especially prepared for packaging wherever attractiveness, protection from dust, grease, fingermarks, water, etc., is desired. It always retains its pliability and will not dry out with age to cause brittle, fragile wrappings or a distorted, wrinkled package, that has lost its brilliancy or crystal-clear color.

		_		PER ROLL MEDIUM	PER ROLL HEAVY
713805	50-foot rolls, 20-inch width	\$1	. 25	\$2.50	
713806	100-foot rolls, 20-inch width	2	. 50		
713807	20-foot rolls, 40-inch width				\$5.85

PROTECTOID (FROSTED)

A shrinkproof, moistureproof overlay sheet. Used for reproduction in line, half-tone, offset and color work. Made in three weights for varied uses.

Per Roll

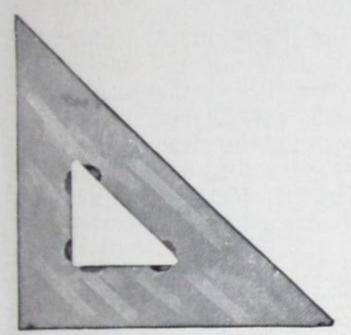
713808 713809	Light Weight, 50-foot rolls, 20 inches wide
713810	Light Weight, 100-foot rolls, 20 inches wide
713811	Medium Weight, 25-foot rolls, 20 inches wide
· IOUII	Weight, 50-100t rolls, 20 inches wide

TO THE

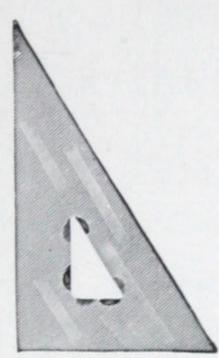
B. K. ELLIOTT COMPANY



TRANSPARENT CELLULOID TRIANGLES



71391-71393



71392



71395

71391 Transparent Celluloid Triangles, open center, 45 x 45°, .060 inch thick, with finger lifts.

INCHES 4 5 6 7 8 9 10 12 14 16 18 EACH..

71392 Transparent Celluloid Triangles, open center, 30 x 60°, .060 inch thick, with finger lifts.

INCHES 4 5 6 7 8 9 10 12 14 16 18 EACH.



71396



71397

18

71396 Transparent Celluloid Triangles, open center, 45 x 45°, .050 inch thick.

INCHES 4 5 6 7 8 9 10 12 14 16

EACH.

71397 Transparent Celluloid Triangles, open center, 30 x 60°, .050 inch thick.

INCHES 4 5 6 7 8 9 10 12 14 16 18

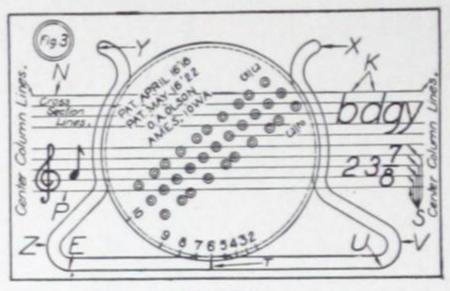
EACH..

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71401

"AMES" LETTERING INSTRUMENT

TRANSPARENT CELLULOID DISC IN METAL FRAME

The Ames Lettering Instrument is winning the approval of many users. Every draftsman, instructor and student will appreciate the operations possible with this instrument.

This instrument permits the user to vary the heights of lettering by adjusting the dial or disc. Slope lines can be drawn without adjustment. Instructions furnished with each instrument.

71401 Ames Lettering Instrument

EACH

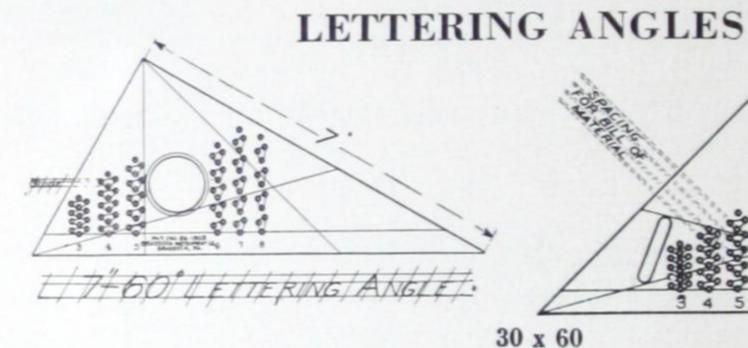
9-INCH

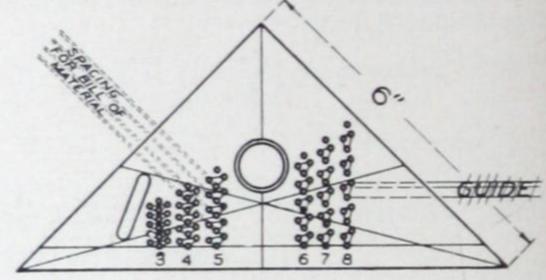
714

7[4]

珂逐

7141





8-INCH

71402 Style A Each 71403 Style B Each

45 x 45 4-Inch 5-Inch 6-Inch 7-Inch 8-Inch

7-INCH

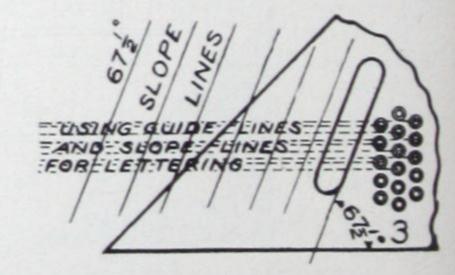
All Style "A" Lettering Angles have the black hair-lines, as shown above, which enable one to obtain angles of 15°, 30°, 45°, 60°, 75°, and 90°, from either a 45° x 45° or a 30° x 60° Lettering Angle, by setting these hair-lines on horizontal or perpendicular lines on the drawing board.

6-INCH

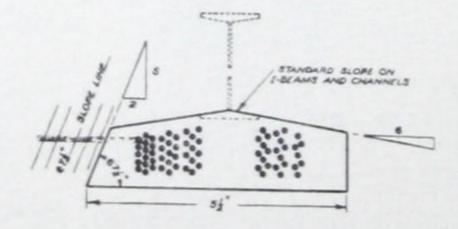
The Style "B" Lettering Angles do not have the black hair-lines that are on the Style "A" shown above. In all other respects, the Style "A" and "B" Lettering Angles are identical.

671/2° SLOT

The 67½° slot is used for making slope guide lines for lettering. The slot is made in all instruments except the Lettering Device and the 4"-45° x 45° and 5"-30° x 60° Lettering Angles.



LETTERING DEVICE



The Lettering Device (not a triangle) is made in one style only. See illustration. The $67\frac{1}{2}^{\circ}$ end is used the same as the $67\frac{1}{2}^{\circ}$ slot illustrated on this page.

71406 Lettering Device..... EACH
Instructions furnished with each instrument.

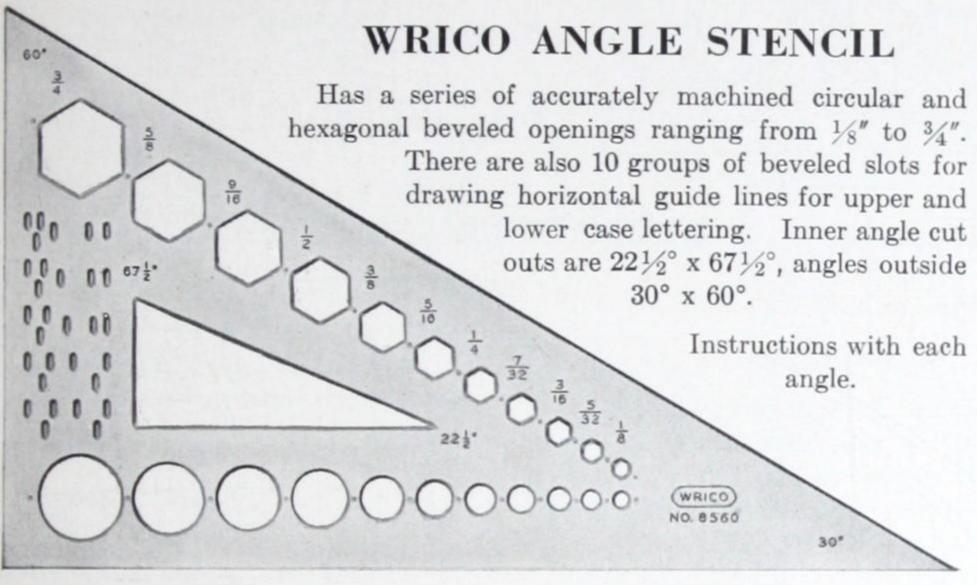
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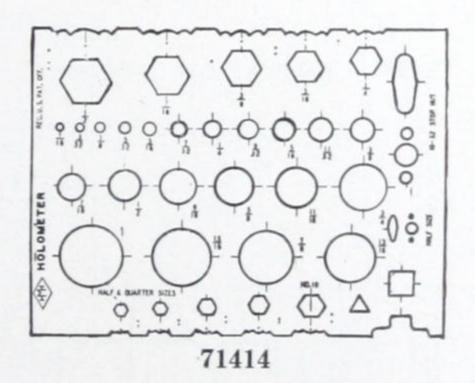
ANGLES FOR ROOF PITCHES AND EMBANKMENTS

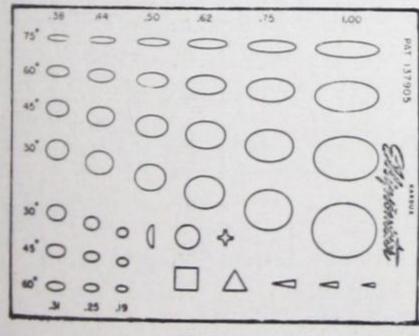


HOLOMETER

A handy tool for laying out hex's, bolt heads, nuts and circles from 1/16" to 1". Made accurately of clear plastic, size 5" x 6½".

EACH





ELLIPSOMETER

Used by Designers, Engineers, Draftsmen and students. Makes for speed, efficiency, accuracy and uniformity. Ellipses in 30–45–60 and 75 degrees from .19 to 1" major axis of ellipse. Made of clear plastic.

EACH

71415

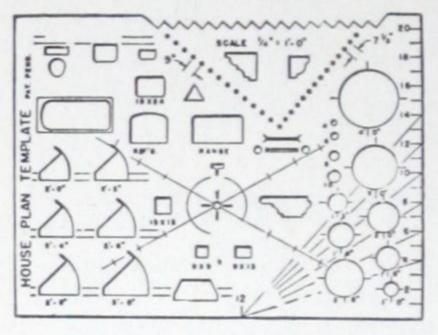
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HOUSE PLAN TEMPLATES



Made of clear plastic, size 5½ x 6¾ inches, this template is a time saver for Architects and Contractors in laying out and placing various fixtures on plans. Stairs, Door Swings, roofpitches, etc. are readily located.

EACH

71431

71432

71421 House Plan Template.....

71421

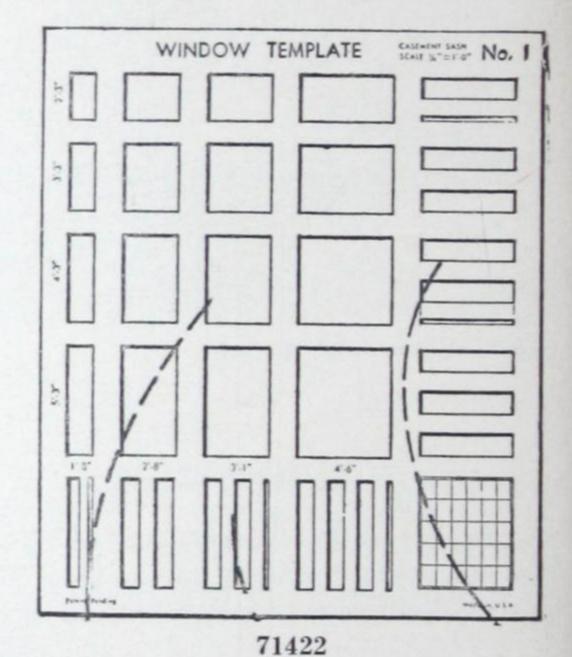
WINDOW TEMPLATES

For rapid accurate drawing of metal or wood casement sash on \(\frac{1}{4}'' - 1' \) scale. Sixteen standard size windows may be drawn direct from template. Glass sizes either 8 x 12" or 16 x 12".

Made of clear plastic, size 6" x 7".

EACH

71422 Casement sash template...



71423

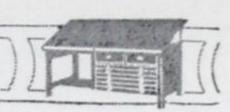
For drawing double-hung sash windows scale \(\frac{1}{4}'' - 1' \). Eighteen popular size windows may be drawn direct from template—an aid in drawing other sizes.

Made of clear plastic size, 6"x7".

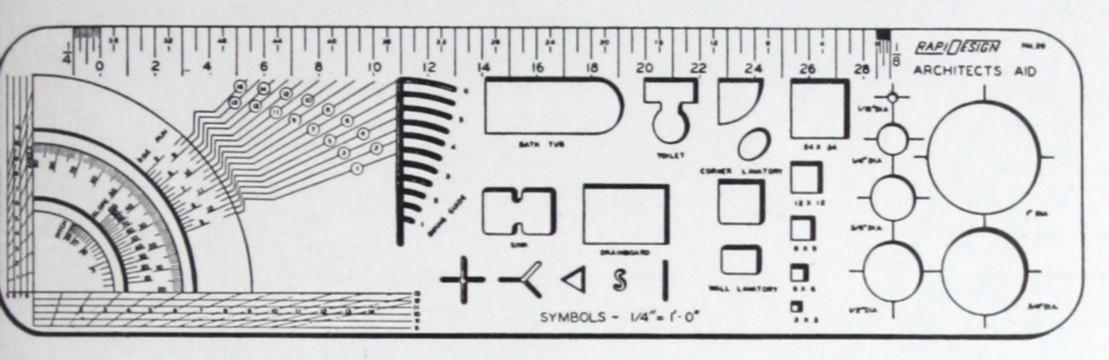
EACH

71423 Double-hung sash template.....





ARCHITECTS AID

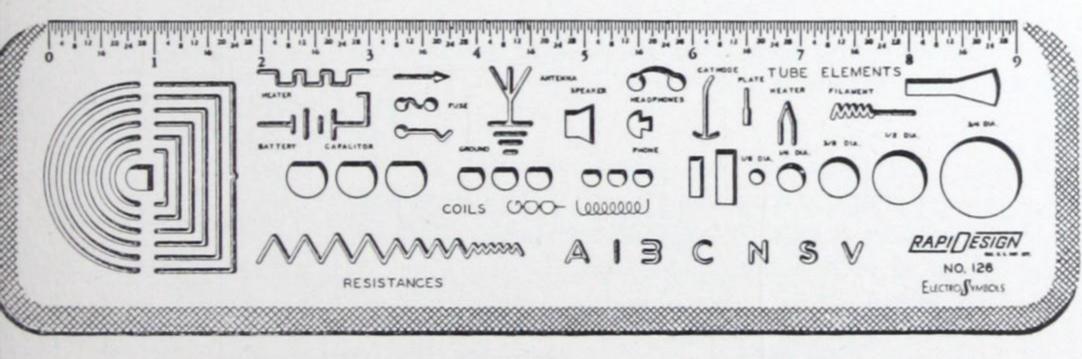


71431

For standard drawings on ¼" - 1' scale, actual size 3 x 10 inches, made from heavy gauge transparent plastic, with clean-cut contours of architectural symbols.

EACH

ELECTRO SYMBOL

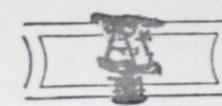


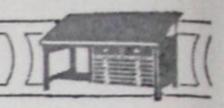
71432

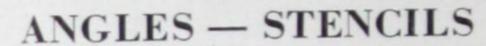
Same size and construction as No. 71431 Architects Aid, but contours for Electronics, Radio, Television, Electrical Engineering and Designing.

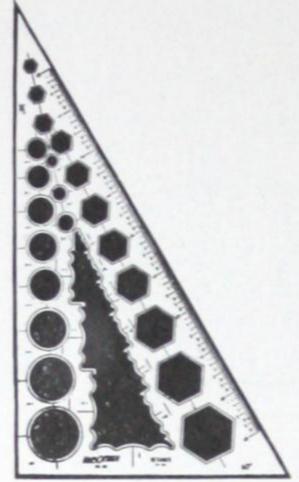
EACH

1432 Electro Symbol.....





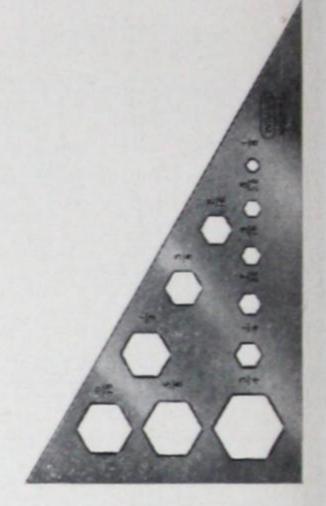




71441

71441 Rapidesign Detailer—A 10inch 60° triangle .080" transparent plastic, with beveled
contours for hexagon cap
screws and circles from 3/16"
to 1" diameter. Each.....

71442 Wrico Triangle—6-inch 60° triangle of green Pyralin with eleven hexagonal beveled openings. Each.....

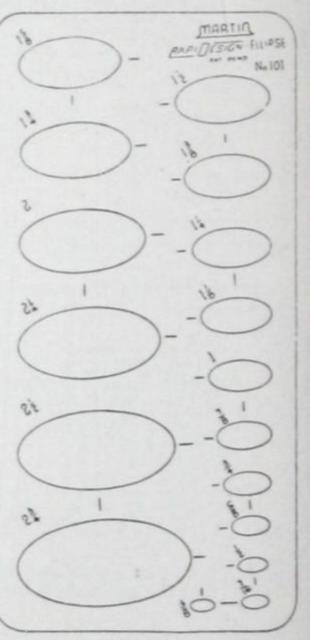


71442

ELLIPSES

For smaller ellipse sizes from 3/8" to 23/4" major axis, this set of four ellipses is a time-saver.

Simple, handy, clean-cut and accurate. Made of .040" transparent Pyralin. Actual size 4¾ x 9¾". Set furnished in handy reinforced folio to keep the four instruments at your service, or individually in envelope.



71444

11458

	EACH
71443	Ellipse 20°
71444	Ellipse 30°
71445	Ellipse 45°
71446	Ellipse 60°
	PER SET
71447	Set of Four Ellipses

取

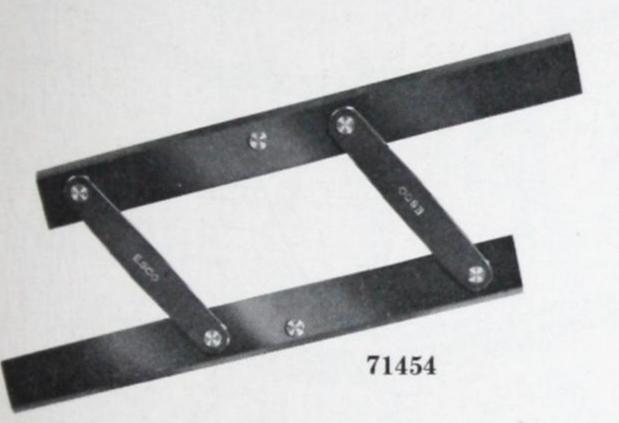
B. K. ELLIOTT COMPANY



PARALLEL RULES



EACH



TENSION SPRING BLADE LINK BEARING CONSTRUCTION FOR PARALLEL RULERS

Plastic Parallel Rule. Made of laminated plastic. Waterproof and easily cleaned. To take-up or adjusting necessary. Bronze bearings fit snugly into counterbored Links and Blades. (See cross-section)

Blades are 5/32" thick; edges beveled; accurate and parallel. Links permit a bree-inch spread.

SECTION LINERS

Strong, simple and durable. The only practical instrument at a reasonable price for draftsmen and pupils in
mechanical and architectural drawing
lasses. It has great range, allowing
paces from 1-100 to ½ inch at any angle
without changing position.

71458

EACH

1458 Standard Section Liner, natural wood finish, nickel-plated mountings, in cardboard box.....

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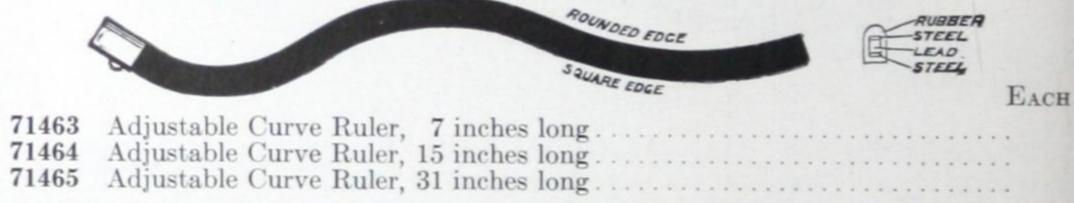
Some Page 145 Johnson



71461 Adjustable Curve Ruler, 14½ inches long.....



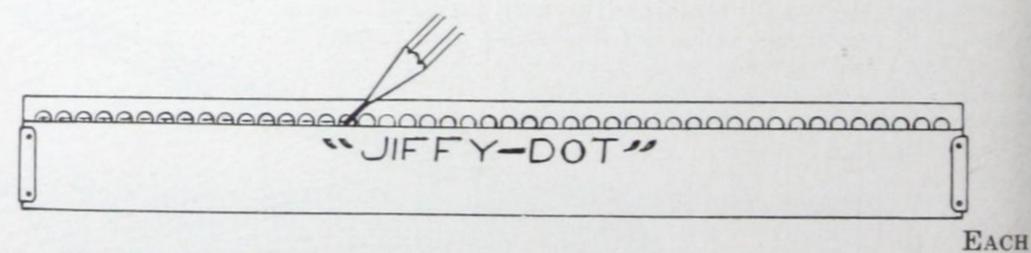
71462 Adjustable Curve Ruler, 30 inches long.....



The above rules are flexible, and any curve can be described and retained as the user may desire.

"JIFFY-DOT"

"Jiffy-Dot" is a perforated celluloid ruler mounted on a metal base. Dotted lines are made by drawing the pencil over perforations.



71466 "Jiffy-Dot", 12 inches long.....

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IRREGULAR CURVES

1471 Trans	paren	t Cell	uloid	Curve	s, .050	0 thic	K						
os	1	2	3	4	5	6	7	8	9	10	11	12	13
ACH													
os	14	15	16	17	18	19	20	21	22	23	24	25	26
ACH													

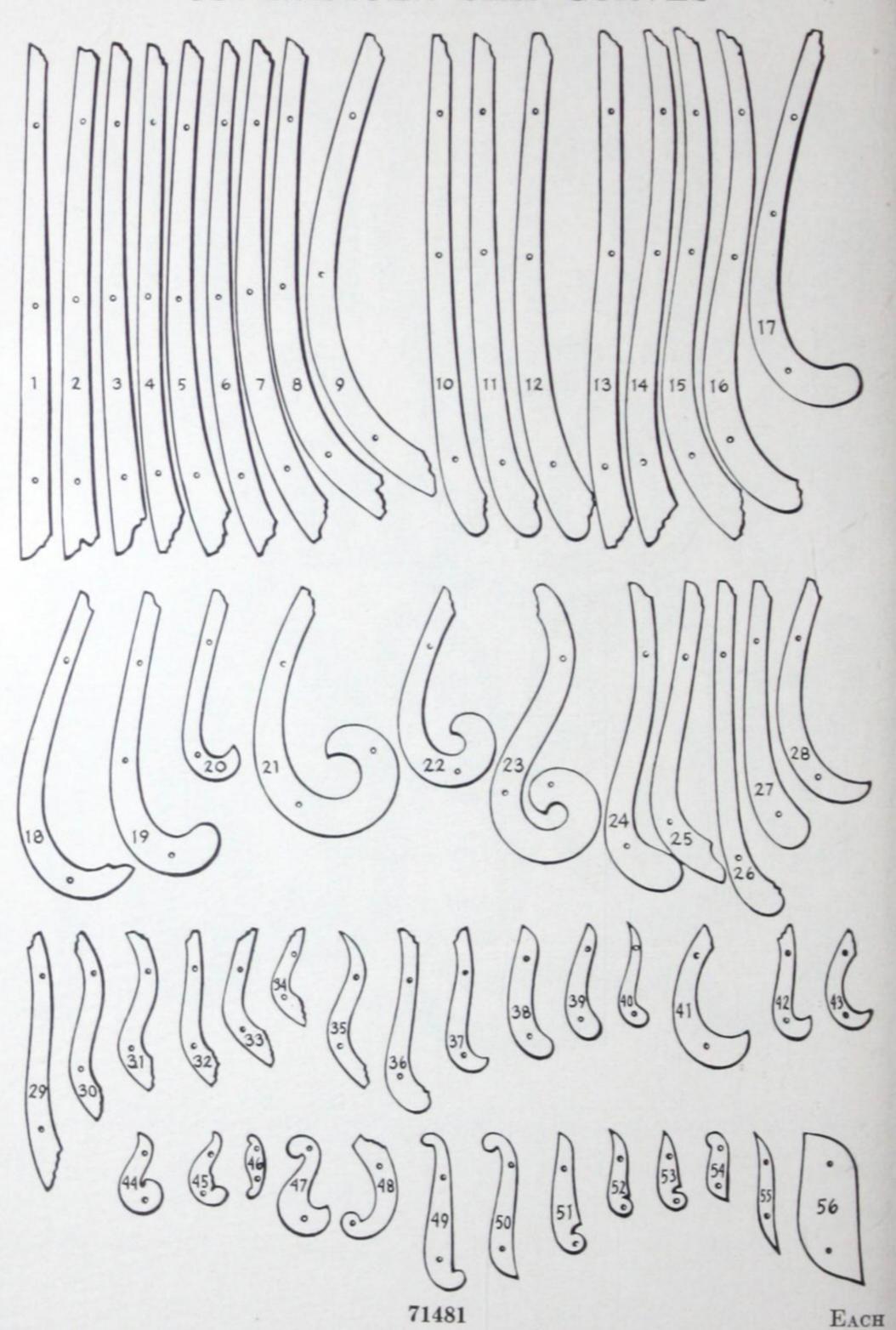
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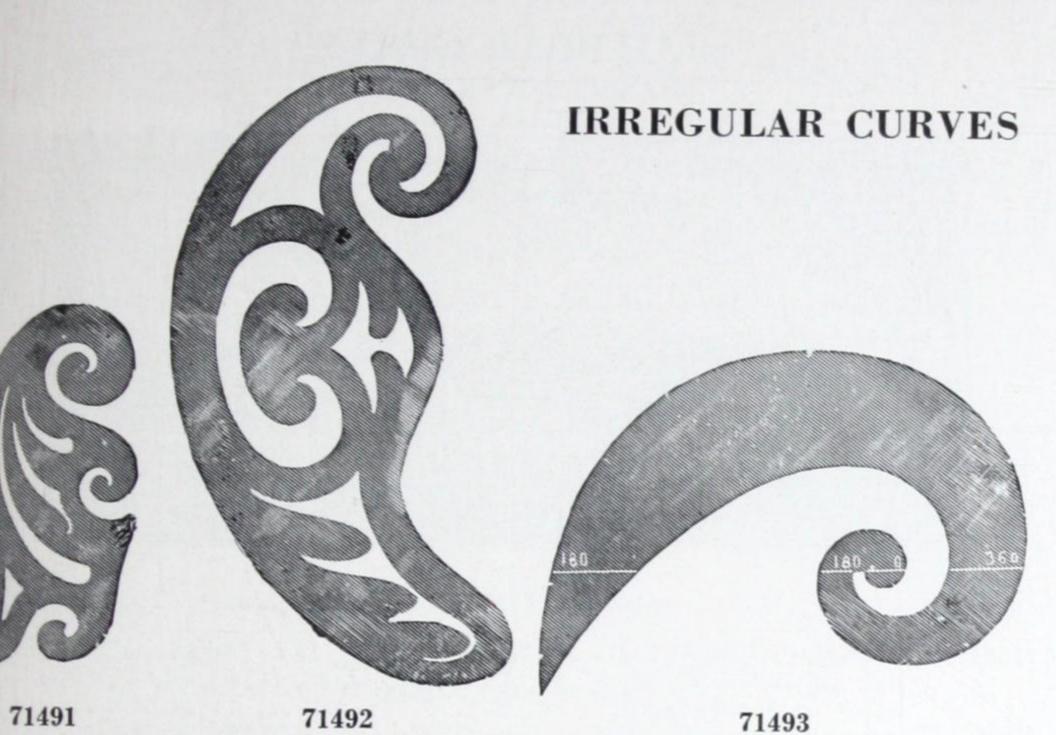
COPENHAGEN SHIP CURVES



See Price List Inside Back Cover

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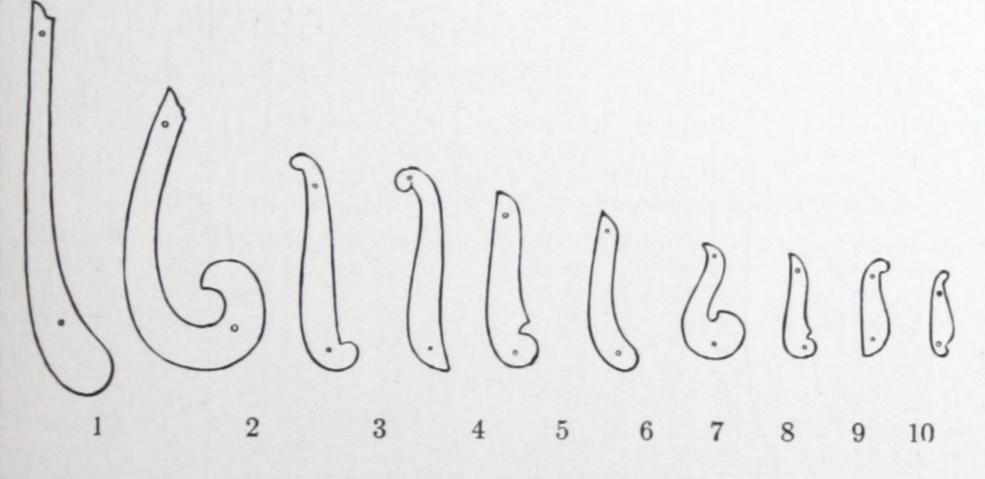


Combination Curve of transparent celluloid.

Combination Curve of transparent celluloid.....

93 Logarithmic Spiral Curve of transparent celluloid.....

CURVES FOR MECHANICAL ENGINEERS



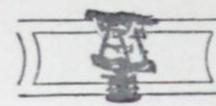
94 Transparent Celluloid Curves, Highly Polished.

...... 1 2 3 4 5 6 7 8 9 10

Per Set of 10 Curves as above in polished wood box.....

See Price List Inside Back Cover

Some Page 149 Johnson





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Single

20 20

Al

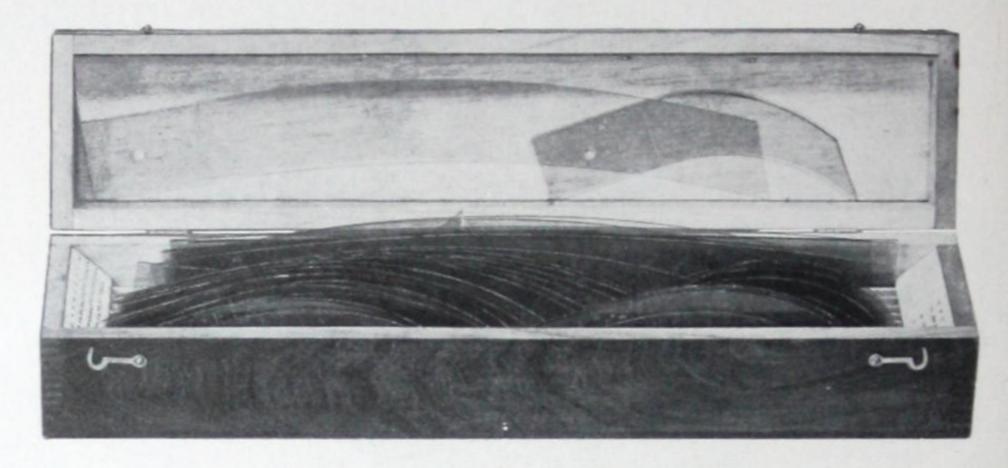
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Se

RAILROAD CURVES

TRANSPARENT CELLULOID



71503

Transparent Celluloid Railroad Curves, 17 in set, 12 to 60-inch radius

inches, in wooden box.

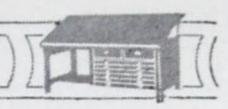
viz.: 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60

PER SET

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71502 Transparent Celluloid Railroad Curves, 24 in set, 2 to 24-inch radius,
              viz.: 2, 2\frac{1}{2}, 3, 3\frac{1}{2}, 4, 4\frac{1}{2}, 5, 5\frac{1}{2}, 6, 6\frac{1}{2}, 7, 7\frac{1}{2}, 8, 8\frac{1}{2}, 9, 9\frac{1}{2}, 10,
              12, 14, 16, 18, 20, 22, 24 inches, in wooden box with partition . . . .
71503 Transparent Celluloid Railroad Curves, with Tangent, 41 in set,
              marked in degrees and inches to 100 feet scale, viz.:
0^{\circ}.30' = 114.59 \text{ in.}
                                 3^{\circ}.30' = 16.37 in.
                                                                  6^{\circ}.00' = 9.55 in.
                                                                                                 8^{\circ}.30' = 6.75 in.
1^{\circ}.00' = 57.30 \text{ in.}
                                 3^{\circ}.45' = 15.28 in.
                                                                 6^{\circ}.15' = 9.17 in.
                                                                                                 8^{\circ}.45' = 6.55 in.
1^{\circ}.15' = 45.84 \text{ in.}
                                  4^{\circ}.00' = 14.33 in.
                                                                  6^{\circ}.30' = 8.82 in.
                                                                                                 9^{\circ}.00' = 6.37 in.
1^{\circ}.30' = 38.20 \text{ in.}
                                 4^{\circ}.15' = 13.48 in
                                                                  6^{\circ}.45' = 8.49 in.
                                                                                                 9^{\circ}.15' = 6.20 in.
1^{\circ}.45' = 32.74 in.
                                 4^{\circ}.30' = 12.73 in.
                                                                  7^{\circ}.00' = 8.19 in.
                                                                                                 9^{\circ}.30' = 6.04 in.
2^{\circ}.00' = 28.65 in.
                                 4^{\circ}.45' = 12.07 in.
                                                                  7^{\circ}.15' = 7.91 in.
                                                                                                 9^{\circ}.45' = 5.88 in.
2^{\circ}.15' = 25.47 in.
                                 5^{\circ}.00' = 11.46 in.
                                                                  7^{\circ}.30' = 7.64 in.
                                                                                               10^{\circ}.00' = 5.74 in.
2^{\circ}.30' = 22.92 \text{ in.}
                                 5^{\circ}.15' = 10.92 in.
                                                                  7^{\circ}.45' = 7.40 in.
                                                                                               10^{\circ}.30' = 5.48 in.
2^{\circ}.45' = 20.84 \text{ in.}
                                 5^{\circ}.30' = 10.42 in.
                                                                  8^{\circ}.00' = 7.17 in.
                                                                                               11^{\circ}.00' = 5.22 in.
3^{\circ}.00' = 19.10 \text{ in.}
                                 5^{\circ}.45' = 9.97 \text{ in.}
                                                                                               11^{\circ}.30' = 4.99 in.
                                                                  8^{\circ}.15' = 6.95 in.
3^{\circ}.15' = 17.63 \text{ in.}
                                                 In wooden box with partition, per set.....
71504 Transparent Celluloid Railroad Curves, with Tangent, 55 in set,
              marked in degrees and inches to 100 feet scale, viz.:
0^{\circ}.15' = 229.18 in.
                                 3^{\circ}.45' = 15.28 in.
                                                                  7^{\circ}.15' = 7.91 in.
                                                                                               11^{\circ}.30' = 4.99 in.
0^{\circ}.30' = 114.59 \text{ in.}
                                 4^{\circ}.00' = 14.33 in.
                                                                  7^{\circ}.30' = 7.64 in.
                                                                                               12^{\circ}.00' = 4.78 in.
0^{\circ}.45' = 76.39 \text{ in.}
                                 4^{\circ}.15' = 13.48 in.
                                                                  7^{\circ}.45' = 7.40 in.
                                                                                               12^{\circ}.30' = 4.59 in.
1^{\circ}.00' = 57.30 \text{ in.}
                                 4^{\circ}.30' = 12.73 in.
                                                                  8^{\circ}.00' = 7.17 in.
                                                                                               13^{\circ}.00' = 4.42 in.
1^{\circ}.15' = 45.84 \text{ in.}
                                 4^{\circ}.45' = 12.07 in.
                                                                  8^{\circ}.15' = 6.95 in.
                                                                                               13^{\circ}.30' = 4.25 in.
1^{\circ}.30' = 38.20 \text{ in.}
                                 5^{\circ}.00' = 11.46 in.
                                                                  8^{\circ}.30' = 6.75 in.
                                                                                               14^{\circ}.00' = 4.10 in.
1^{\circ}.45' = 32.74 \text{ in.}
                                 5^{\circ}.15' = 10.92 in.
                                                                  8^{\circ}.45' = 6.55 in.
                                                                                               14^{\circ}.30' = 3.96 in.
2^{\circ}.00' = 28.65 \text{ in.}
                                 5^{\circ}.30' = 10.42 in.
                                                                  9^{\circ}.00' = 6.37 in.
                                                                                               15^{\circ}.00' = 3.83 in.
2^{\circ}.15' = 25.47 in.
                                 5^{\circ}.45' = 9.97 \text{ in.}
                                                                  9^{\circ}.15' = 6.20 in.
                                                                                               16^{\circ}.00' = 3.59 in.
2^{\circ}.30' = 22.92 \text{ in.}
                                 6^{\circ}.00' = 9.55 \text{ in.}
                                                                 9^{\circ}.30' = 6.04 in.
                                                                                               17^{\circ}.00' = 3.38 in.
2^{\circ}.45' = 20.84 \text{ in.}
                                 6^{\circ}.15' = 9.17 \text{ in.}
                                                                 9^{\circ}.45' = 5.88 in.
                                                                                               18^{\circ}.00' = 3.20 in.
3^{\circ}.00' = 19.10 \text{ in.}
                                 6^{\circ}.30' = 8.82 \text{ in.}
                                                                10^{\circ}.00' = 5.74 in.
                                                                                               19^{\circ}.00' = 3.03 in.
3^{\circ}.15' = 17.63 \text{ in.}
                                 6^{\circ}.45' = 8.49 \text{ in.}
                                                               10^{\circ}.30' = 5.48 in.
                                                                                               20^{\circ}.00' = 2.88 in.
3^{\circ}.30' = 16.37 \text{ in.}
                                 7^{\circ}.00' = 8.19 \text{ in.}
                                                                11^{\circ}.00' = 5.22 in.
In wooden box with partition, per set.....
                                                                                                               EACH
          71505
```

Single Railroad Curves of Transparent Celluloid, with Tangent.....





BOXWOOD AND WHITE EDGE SCALES

U. S. STANDARD. MACHINE DIVIDED.

Elliott's Boxwood Scales are made of carefully selected, first quality, seasoned oxwood, which insures their lasting quality and accuracy.

Our White Edge Scales are made with carefully inlaid seasoned celluloid, which liminates shrinkage and expansion. The graduations are sharp and distinct, therefore asily read.

To assist you in ordering, and, also, to avoid errors and delays, we show below the arious shapes of scales and the methods of dividing: Open divided and Full divided.

NOTE—Full divided scales are sometimes called chain scales.

FLAT SCALES



Single Bevel





Opposite Bevel

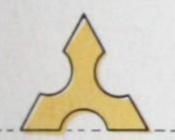


Flat



Double Bevel



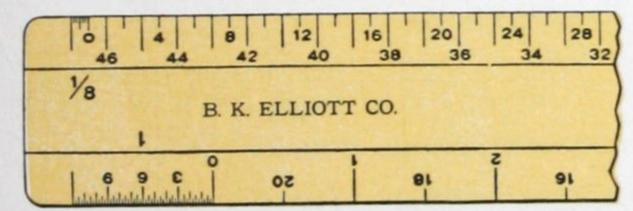


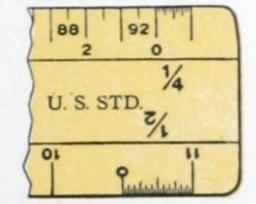
Regular Shape

End views of both the regular and improved shapes of triangular scales, are illustrated. In addition to the full surface bearing on the paper, the divisions on the edge of the regular shaped scale wear longer than the improved shape. However, the improved shape prevents wearing of the drawing surface and affords a better angle of vision. Specify shape desired.

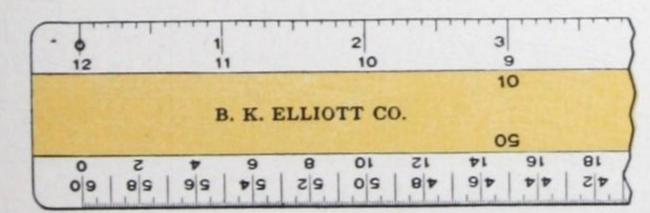


Improved Shape





Above shows a plain boxwood scale, open divided, especially adapted for architectural and mechanical engineering use.



11		12
1		0
U. S. S.	TD.	
U. S. S.		
U. S. S.	rD.	09

Above shows a white edge boxwood scale, full divided. Recommended for civil engineering work.

All chain scales are full divided.

Scales made to order with special graduations. Write for quotations, send sketch showing divisions and numbering desired.





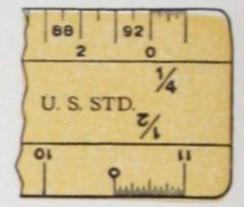
FLAT BOXWOOD SCALES

U. S. STANDARD. MACHINE DIVIDED.

Flat Scales are easier read, more convenient, less liable to cause errors and cost less to replace than Triangular Scales.



46	44	8 1	2 16 40 38	36	24	28
1/8	В	K. ELL	IOTT CO.			
1 6	9 6 1	50		91	2	. (

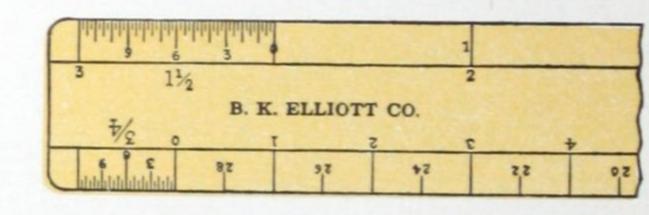


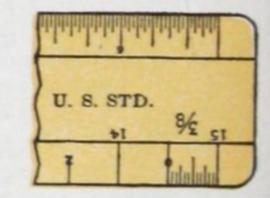
Open Divided 1/8, 1/4, 1/2, 1 Inch to Foot

715201 Boxwood, 6-inch Flat Scale.
715202 Boxwood, 12-inch Flat Scale.
715203 Boxwood, 12½-inch Flat Scale.
715204 Boxwood, 18-inch Flat Scale.

covers 100 feet on 1/8-inch, 50 feet on 1/4-inch, and 25 feet on 1/2-inch Scale.







Open Divided 3/8, 3/4, 11/2, 3 Inches to Foot

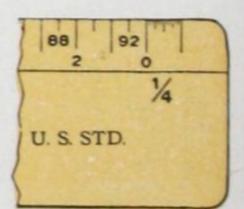
		EACH
715205	Boxwood, 6-inch Flat Scale	LACH
110200	Boardod, 0-men Flat Scale	
715206	Boxwood, 12-inch Flat Scale	
F1 F00F	D 1 10 1 10 10 10 10 10 10 10 10 10 10 10	
715207	Boxwood, 18-inch Flat Scale	

OPPOSITE BEVEL SCALES

Opposite Bevel Scales are an improvement over regular flat shapes, as they are more readily picked up and present only one graduated edge to the eye when in use.







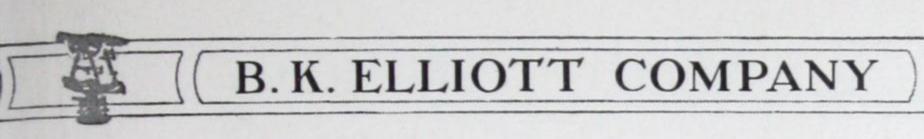
gradi

Open Divided 1/8, 1/4, 1/2, 1 Inch to Foot

	70, 74, 72,	~
$715208 \\ 715209$	Boxwood, 6-inch Opposite Bevel Scale Boxwood, 12-inch Opposite Bevel Scale	Еасн
715210	Boxwood, 6-inch Opposite Bevel Scale Boxwood, 12-inch Opposite Bevel Scale	

See Price List Inside Back Cover

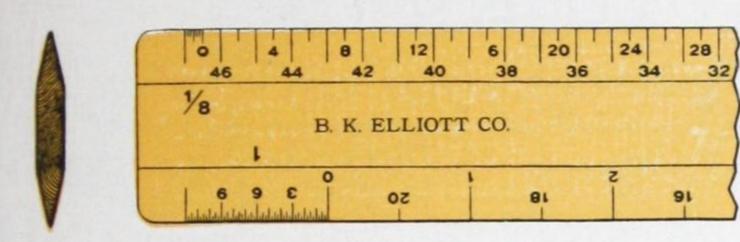
mono PAGE 152 Johnson

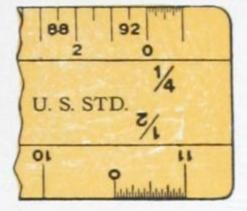


FLAT BOXWOOD SCALES

U. S. STANDARD. MACHINE DIVIDED.

DOUBLE BEVEL SCALES

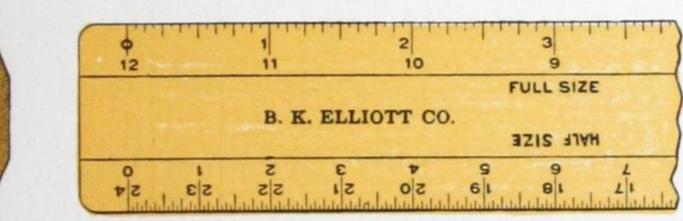


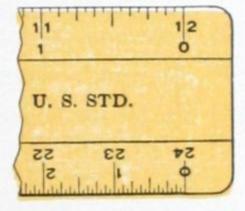


Open Divided 1/8, 1/4, 1/2, 1, 3/8, 3/4, 11/2, 3 Inches to Foot

EACH

FULL SIZE GRADUATIONS



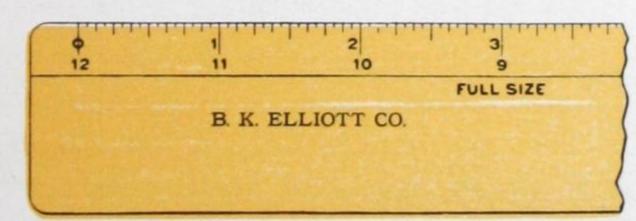


Full Divided

EACH

OPPOSITE BEVEL







Full Divided

Еасн

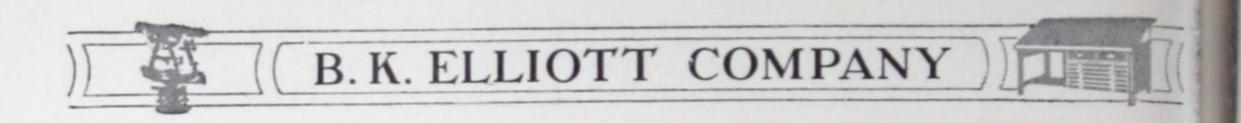
71535 Boxwood, 12-inch 1/8 and 1/4-size Opposite Bevel Scale.....

71536 Boxwood, 12-inch 1/2 and full-size Opposite Bevel Scale.....

Special Scales of any desired graduations or combinations made to order on short notice. To insure prompt attention and to avoid delays, always send sketch showing graduations desired.

See Price List Inside Back Cover

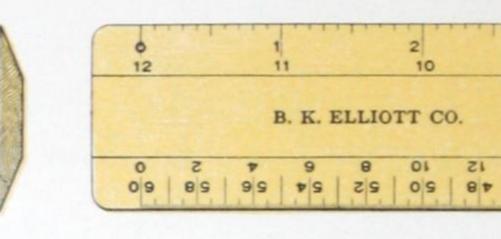
mono Page 153 Johnson

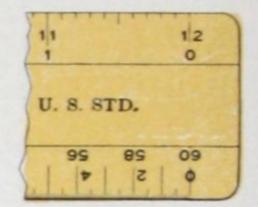


FLAT BOXWOOD SCALES

U. S. STANDARD. MACHINE DIVIDED.

FLAT CHAIN SCALES





71551

71553

71554

71555 71556

FULL DIVIDED

T15401 Boxwood, 6-inch Scale 10 x 50.

715402 Boxwood, 12-inch Scale 10 x 50.

715403 Boxwood, 6-inch Scale 20 x 40.

715404 Boxwood, 12-inch Scale 20 x 40.

715405 Boxwood, 6-inch Scale 30 x 60.

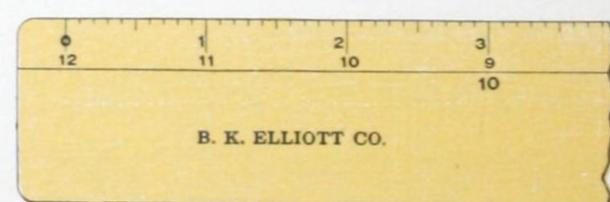
715406 Boxwood, 12-inch Scale 30 x 60.

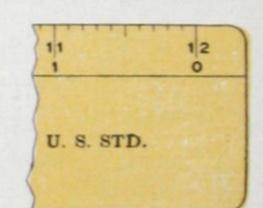
715407 Boxwood, 6-inch Scale 80 x 100.

715408 Boxwood, 12-inch Scale 80 x 100.

OPPOSITE BEVEL SCALES



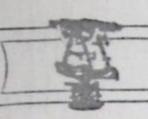




		EACH
715409 Boxwood, 6-inch Scale 10 x	50	
	50	
	40	
	60	
	00	

See Price List Inside Back Cover

PAGE 154 Johnson



71551

71553

71554

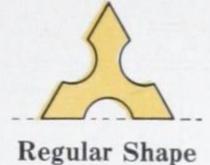
71555

B. K. ELLIOTT COMPANY



TRIANGULAR BOXWOOD SCALES

FOR ARCHITECTS AND MECHANICAL ENGINEERS U. S. Standard. Machine Divided.



REGULAR SHAPE



Divided $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, $\frac{3}{8}$, $\frac{3}{4}$, $\frac{11}{2}$, 3, $\frac{3}{16}$, $\frac{3}{32}$, Inches to the Foot, $\frac{1}{16}$ Inch EACH Boxwood, 6-inch Triangular Architects' Scale..... Boxwood, 12-inch Triangular Architects' Scale..... 71552

B.K.ELLIOTT CO. U.S.STD.

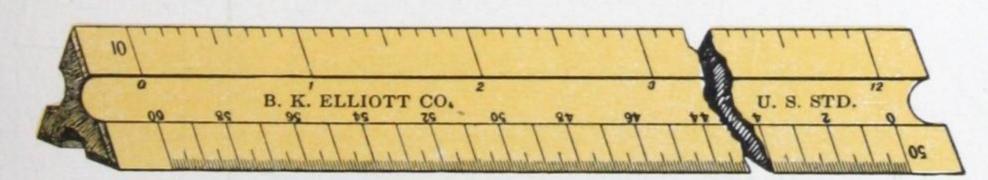
Divided $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, $\frac{3}{8}$, $\frac{3}{4}$, $\frac{11}{2}$, 3, 2, 4 Inches to the Foot, $\frac{1}{16}$ Inch EACH

U.S.STD. B. K. ELLIOTT CO.

Boxwood, 12-inch Triangular Architects' Scale......

Divided $\frac{3}{8}$, $\frac{3}{4}$, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1,50, Half and Full Size EACH Boxwood, 12-inch Triangular Architects' Scale.....

FOR CIVIL ENGINEERS AND SURVEYORS



Divided 10, 20, 30, 40, 50, 60 Parts to the Inch EACH Boxwood, 6-inch Triangular Engineers' Scale.....

71556 Boxwood, 12-inch Triangular Engineers' Scale..... Divided 20, 30, 40, 50, 60, 80 Parts to the Inch

EACH Boxwood, 12-inch Triangular Engineers' Scale...... 71557

See Price List Inside Back Cover

PAGE 155 Posson

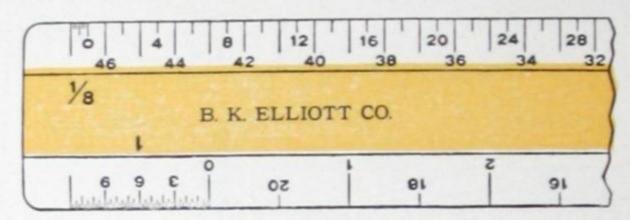


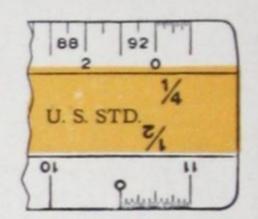


FLAT WHITE EDGE SCALES

U. S. STANDARD. MACHINE DIVIDED. FOR ARCHITECTS AND MECHANICAL ENGINEERS







Open Divided 1/8, 1/4, 1/2, 1 Inch to Foot

EACH

71571

71575

71276

71579

With

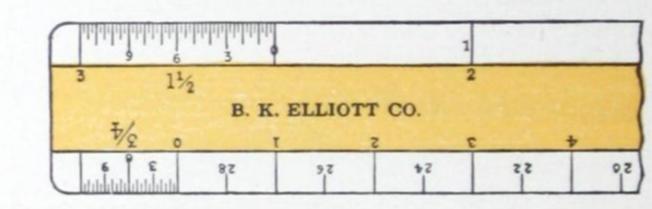
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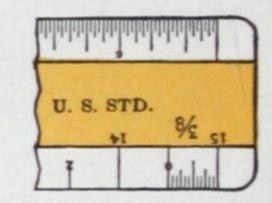
White Edge, 6-inch Flat Scale..... 71561

White Edge, 12-inch Flat Scale..... 71562 71563

White Edge, 12½-inch Flat Scale..... covers 100 feet on 1/8-inch, 50 feet on 1/4-inch, and 25 feet on 1/2-inch Scale.







Open Divided 3/8, 3/4, 11/2, 3 Inches to Foot

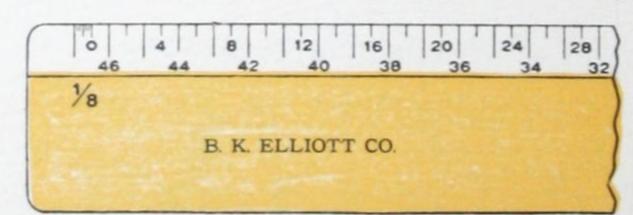
White Edge, 6-inch Flat Scale..... White Edge, 12-inch Flat Scale..... 71565

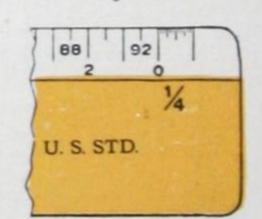
EACH

OPPOSITE BEVEL SCALES

Opposite Bevel Scales are an improvement over regular flat shapes as they are more readily picked up and present only one graduated edge to the eye when in use







Open Divided 1/8, 1/4, 1/2, 1 Inch to Foot

White Edge, 6-inch Opposite Bevel Scale..... 71566 White Edge, 12-inch Opposite Bevel Scale..... 71567

EACH

3/8, 3/4, 11/2, 3 Inches to Foot

EACH White Edge, 6-inch Opposite Bevel Scale..... 71568 White Edge, 12-inch Opposite Bevel Scale.... 71569

See Price List Inside Back Cover

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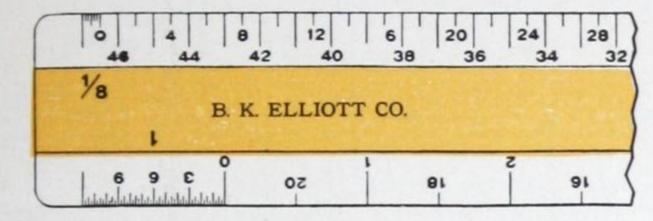


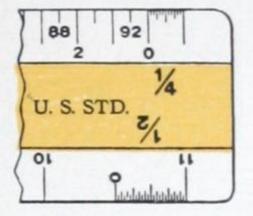
FLAT WHITE EDGE SCALES

U. S. STANDARD. MACHINE DIVIDED.

DOUBLE BEVEL SCALES

OPEN DIVIDED





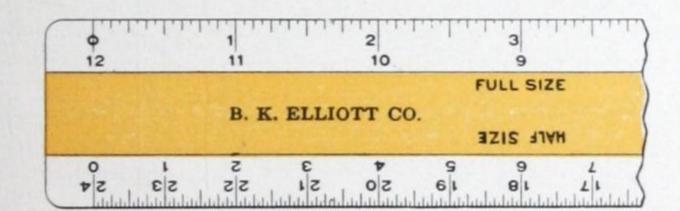
 $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, $\frac{3}{8}$, $\frac{3}{4}$, $\frac{1}{2}$, 3 Inches to Foot

EACH

White Edge, 6-inch Double Bevel Scale..... 71571 White Edge, 12-inch Double Bevel Scale..... 71572 White Edge, 18-inch Double Bevel Scale..... 71573

FULL SIZE GRADUATIONS

White Edge, 24-inch Double Bevel Scale.....



1		0
U. S.	STD.	
22	23	24

71575 White Edge, 12-inch, 1/8 and 1/4 size, Flat Scale... 71576

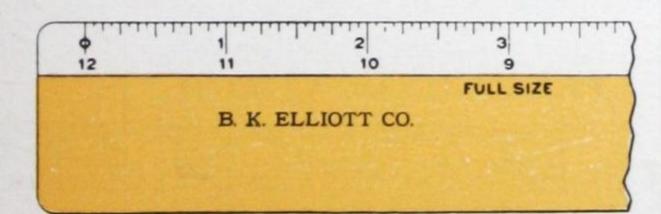
White Edge, 12-inch, ½ and full size, Flat Scale.....

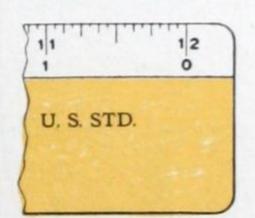
Еасн

OPPOSITE BEVEL



71574





EACH

71577 White Edge, 12-inch—1/8 and 1/4 size Opposite Bevel Scale...... 71578 White Edge, 6-inch—½ and full size Opposite Bevel Scale..... 71579

White Edge, 12-inch—½ and full size Opposite Bevel Scale.....

Special Scales of any desired graduations or combinations made to order on short notice. To insure prompt attention and to avoid delays, always send sketch showing graduations and numbering desired.

See Price List Inside Back Cover

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1135 8

FLAT WHITE EDGE SCALES

U. S. STANDARD. MACHINE DIVIDED.

CHAIN SCALES



6		1			2		3		
12		1	1		10			9	
							1	0	
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		В	. K. E	ELLIO	TT C).	0	g	
0	5	P	9. K. E	8 ELLIO	TT CO).	0	91	91

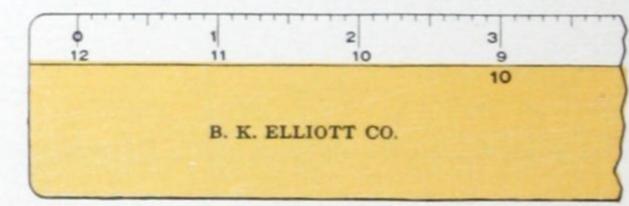
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U. S. 8	TD.	
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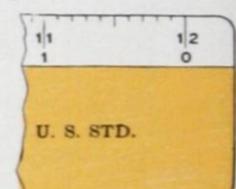
		EACH
715801	White Edge, 6-inch Chain Scale 10 x 50	
715802	White Edge, 12-inch Chain Scale 10 x 50	
715803	White Edge, 6-inch Chain Scale 20 x 40	
715804	White Edge, 12-inch Chain Scale 20 x 40	
715805	White Edge, 6-inch Chain Scale 30 x 60	
715806	White Edge, 12-inch Chain Scale 30 x 60	
715807	White Edge, 6-inch Chain Scale 80 x 100	
715808	White Edge, 12-inch Chain Scale 80 x 100	

OPPOSITE BEVEL SCALES

These scales are an improvement over the regular flat scales, as they are more readily picked up, and present but one graduated bevel to the eye when in use.



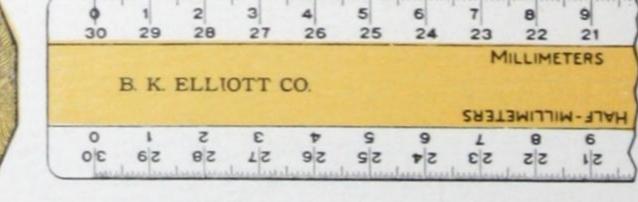




		EACH
715809	White Edge, 6-inch Chain Scale 10 x 50	
715810	White Edge, 12-inch Chain Scale 10 x 50	
715811	White Edge, 12-inch Chain Scale 20 x 40	
715812	White Edge, 12-inch Chain Scale 30 x 60	
715813	White Edge, 12-inch Chain Scale 80 x 100	

METRIC GRADUATIONS





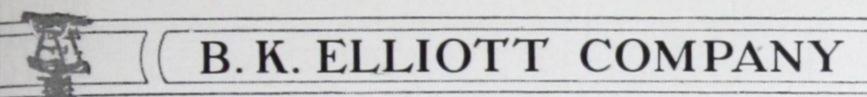
ST'D METER	28	29	30
07 67 00	ST'D MI	ETER	
C 80 00 00	58 3	58	30

EACH

715814 715815	White Edge, S White Edge, S	cale 10 centimeters	long, Flat or Opposite long, Flat or Opposite	Bevel
715816	White Edge, S	cale 30 centimeters	long, Flat or Opposite long, Flat or Opposite	Bevel

See Price List Inside Back Cover

Some Page 158 Johnson



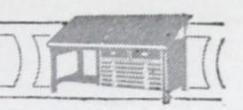
1591

1592

1593

1594

1595

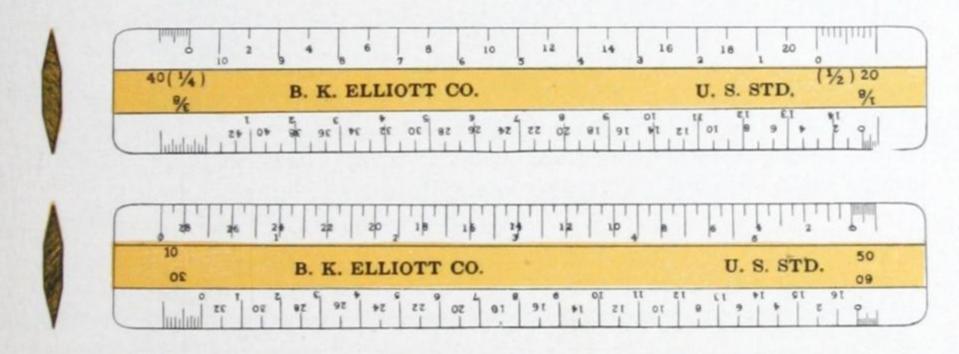


POCKET WHITE EDGE SCALES

U. S. Standard. Machine Divided.

22	20	18	12	16	12	10	28	32	36	40	44
1/6		В. К	. ELL	IOTT	co.				U.	s. std.	2/4
1 0	0 0	9		1		2		9	,	*	9

COVELL POCKET SCALE

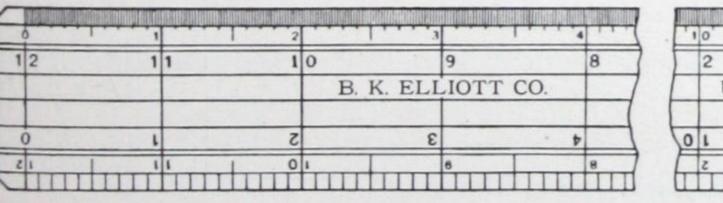


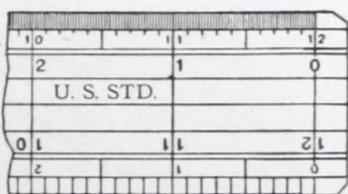
EACH

1596 Covell Pocket Scale, 6 inches.....

A scale every Architect and Engineer should own. White edge flat pocket scale ivided ½, ¾, 14, and ½ on one side and 10, 30, 50, and 60 parts to the inch on the ther side. Scale comes in leather sheath.

UNDERWRITER'S SCALE





EACH

1598 Flat Underwriter's Scale like No. 71597, but 12 inches.....

See Price List Inside Back Cover

mono Page 159 Johnson





griduati

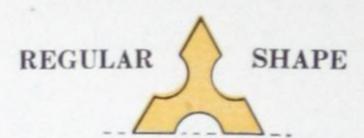
71616

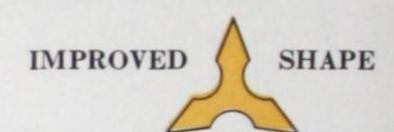
71617

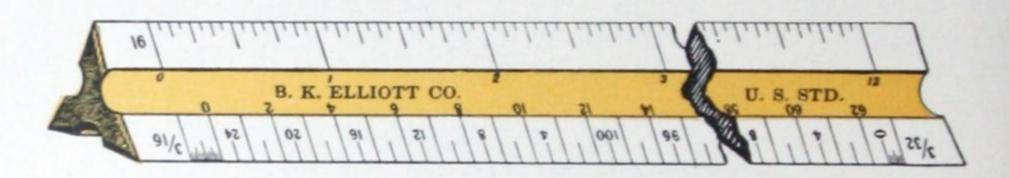
TRIANGULAR WHITE EDGE SCALES

U. S. Standard. Machine Divided.

FOR ARCHITECTS AND MECHANICAL ENGINEERS







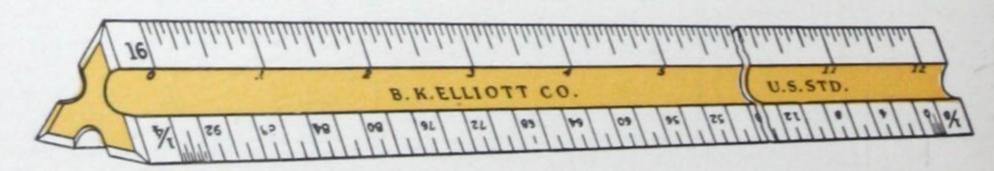
Divided $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, $\frac{3}{8}$, $\frac{3}{4}$, $\frac{11}{2}$, 3, $\frac{3}{16}$, $\frac{3}{32}$ inches to the foot, $\frac{1}{16}$ inch.

						EACH
71601	White Edge,	6-inch	Triangular	Scale,	regular shape	
71602	White Edge,	12-inch	Triangular	Scale,	regular shape	
					improved shape	
71604					improved shape	



Divided $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, $\frac{3}{8}$, $\frac{3}{4}$, $\frac{11}{2}$, 3, 2, 4 inches to the foot, $\frac{1}{16}$ inch.

71605	White Edge, 12-inch Triangular Scale, regular shape	EACH
	White Edge, 12-inch Triangular Scale, improved shape	

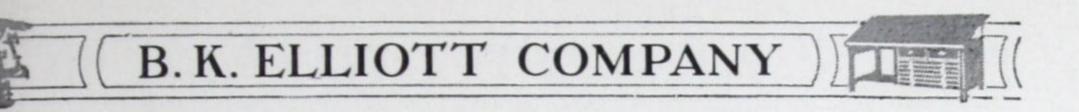


Divided 3/8, 3/4, 1/8, 1/4, 1/2, 1, 50 and half and full size.

71607	White Edge 10: 1 Tr : 1 Cr :	ACH
11001	White Edge, 12-inch Triangular Scale, regular shape	
71608	White Edge, 12-inch Triangular Scale, improved shape	
	British Lind Batter Scarc, Improved Shape	

See Price List Inside Back Cover

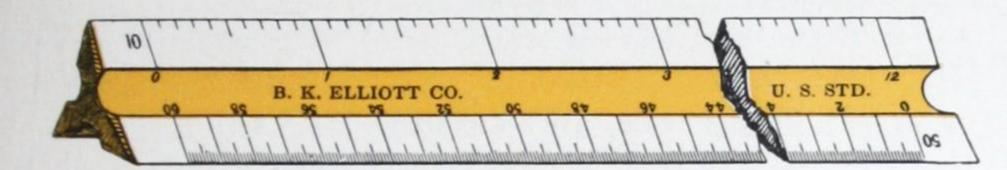
PAGE 160 Joseph



TRIANGULAR WHITE EDGE SCALES

U. S. Standard. Machine Divided.

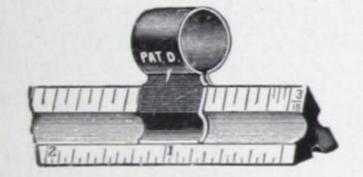
FOR CIVIL ENGINEERS AND SURVEYORS



Divided 10, 20, 30, 40, 50, 60 parts to the inch.

Елсн

White Edge, 6-inch Triangular Engineers' Scale, regular shape......
White Edge, 12-inch Triangular Engineers' Scale, regular shape......
White Edge, 6-inch Triangular Engineers' Scale, improved shape......
White Edge, 12-inch Triangular Engineers' Scale, improved shape......



TRIANGULAR SCALE GUARDS

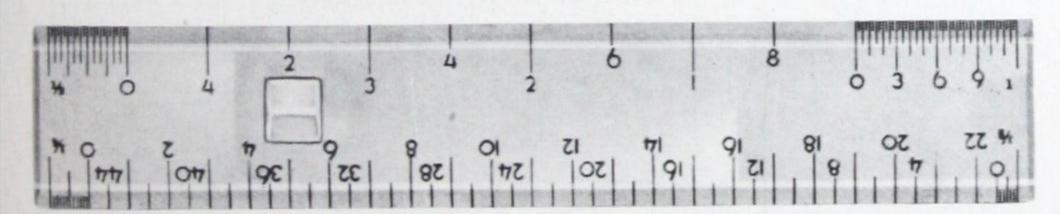


EACH

71615 Triangular Scale Guard, nickel plated.....

Special Scales of any desired graduations or combinations made to order on short notice. To insure prompt attention and to avoid delays, always send sketch showing graduations desired.

TRANSPARENT SCALES

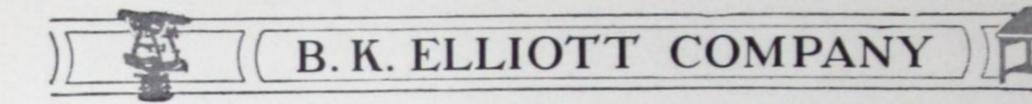


CLEANING SCALES

Scales should not be cleaned with soap and water as this tends to warp both the wood and celluloid. Use powdered pumice and oil applied with a cloth or absorbent cotton.

See Price List Inside Back Cover

Some Page 161 Johnson



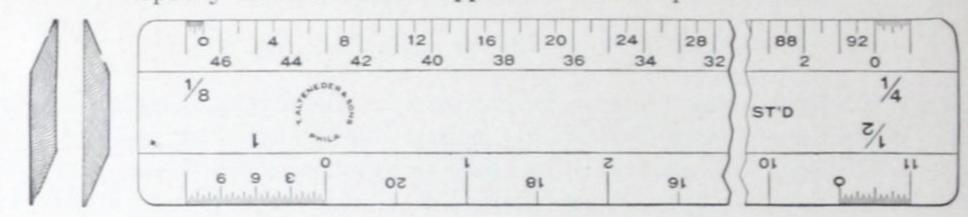
ALTENEDER DRAFTING SCALES

Alteneder drafting scales are of the same high quality as Alteneder drawing instruments and are recognized as superior to any on the market today. The graduations are engine divided to United States standard measurements. They are made from seasoned boxwood and celluloid, the lines and figures are unusually distinct and permanent, and they are well finished in every detail.

Scales are also furnished in white opaque plastic "Vinylite" which material is inert and will not warp or shrink over a normal temperature range.

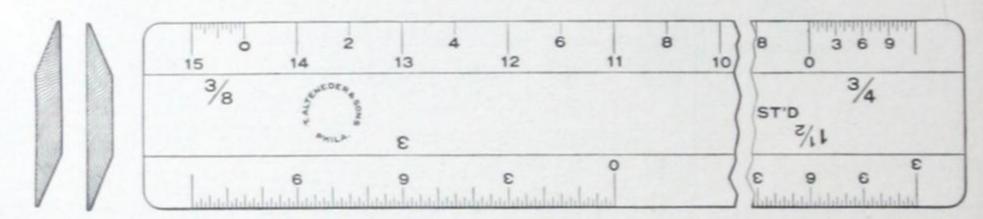
FLAT OR OPPOSITE BEVEL

Specify whether Flat or Opposite Bevel Shape is desired

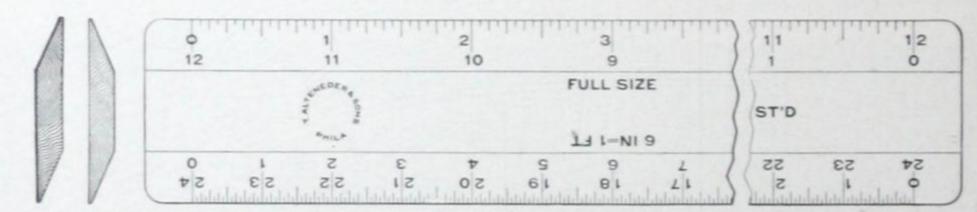


Bev

	Vinylite	EACH	White Edge	EACH
6-inch, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, and 1 inch to the foot	.716201		716204	
12-inch, graduated as above			716205	
24-inch, graduated as above	716203		716206	



6-inch, $\frac{3}{8}$, $\frac{3}{4}$, $\frac{11}{2}$, and 3 inches to the foot.	Vinylite .716207	White Edge 716210	Еасн
12-inch, graduated as above	.716208	 716211	
24-inch, graduated as above	716209	 716212	



6-inch, Full Size to 16ths or 32nds and Half	Vinylite	Еасн	White Edge	EACH
Size to 16ths	.716213		716216 716217	
24-inch, graduated as above	716215		716218	

There will be no additional charge for different combinations of above scales where arrangements are standard.

12-inch, Quarter and Eighth Size (unless	
specified otherwise, the Quarter Size will be	
subdivided to eighths and the Eighth Size	
to quarters)	716221
12-inch, Full Size to 16ths and Full Size to	
32nds	716222



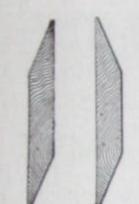


12

15

ALTENEDER DRAFTING SCALES

Specify whether Flat or Opposite Bevel Shape is desired

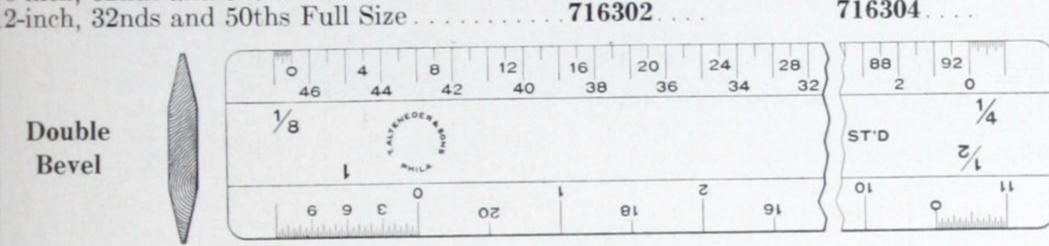


6-inch, 32nds and 50ths Full Size...

0	1	2	3	
12	11	10	9	
	25054		32	
	SHOP SHOP			
	A MILE		09	
0	A A A	z	09 E	

udantahahahahahalantah	ulunhahadadadada	(ulmihudauhadauhinkinkadauhind	
Vinylite	EACH	White Edge	Еасн
716301		716303	
716302		716304	

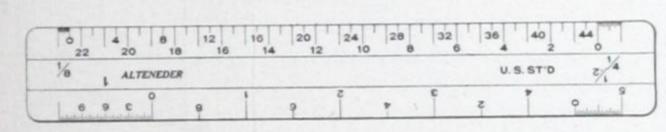
Double Bevel



1/	1/	1/	1 3/	3/	114	and 3	inches	to the	foot.
1/0	1/4	1/0	0/0	0/4	1/9	and o	HICHES	to the	1000.

70, 74, 72, -, 70, 74, 72,	Vinylite	EACH	White Edge	EACH
6-inch	716305		716308	
2-inch	716306		716309	
24-inch	716307		716310	

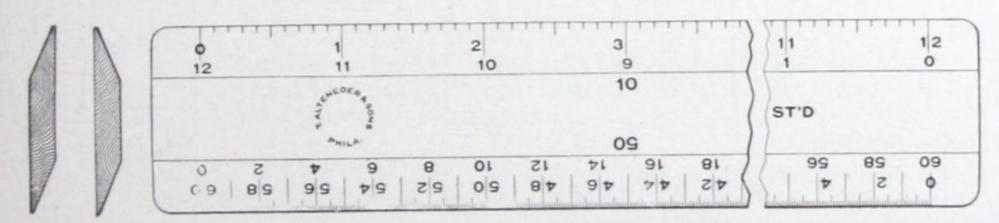
DOUBLE BEVEL POCKET SCALES



These scales are one inch in width and furnished in a leather sheath. The bevels are not veneered but made in one solid piece which permits them to be finished to a fine edge.

	Vinylite	Елсн	White Edge	Еасн
6-inch, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, $\frac{3}{8}$, $\frac{3}{4}$, $\frac{11}{2}$, and 3 inch	to 🗪			
the foot			716315	
6-inch, 10, 20, 40 and 50 parts to the inch	716312		716316	
6-inch, 10, 30, 40 and 50 parts to the inch	716313		716317	
6-inch, 10, 16, 32 to the inch and millimeters.	716314		716318	

CIVIL ENGINEER'S SCALES

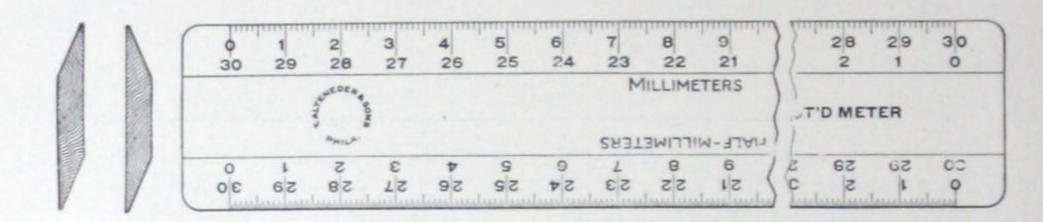


	Vinylite EACH	White Edge EACH
6-inch, 10 x 50 to the inch	.716319	716327
6-inch, 20 x 40 to the inch	.716320	716328
6-inch. 30 x 60 to the inch	.716321	716329
6-inch, 80 x 100 to the inch	.716322	716330
12-inch, 10 x 50 to the inch	.716323	716331
12-inch, 20 x 40 to the inch	.716324	716332
12-inch, 30 x 60 to the inch	.716325	716333
12-inch, 80 x 100 to the inch		716334





ALTENEDER DRAFTING SCALES METRIC SCALES

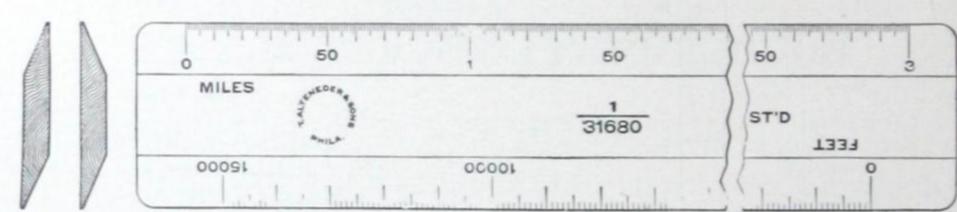


	Vinylite	Елсн	White Edge	EACH
20-cm., millimeter and half millimeter	.71641		71644	
30-cm., millimeter and half millimeter	71642		71645	
50-cm., millimeter and half millimeter	71643		71646	

PLOTTING SCALES

Furnished in White Edge only

If shape is not specified Flat Scales will be furnished



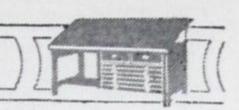
The state of the s	nulmilind	
1:31680 (2" = 1 mile)	White Edge	Елсн
1:63360 (1 inch = 1 mile)	71648	
1:62500	71649	
1:125000—1:62500	716410 125000.) 62500.)	

Note: In these scales the mile side appears in black and the feet side in red.

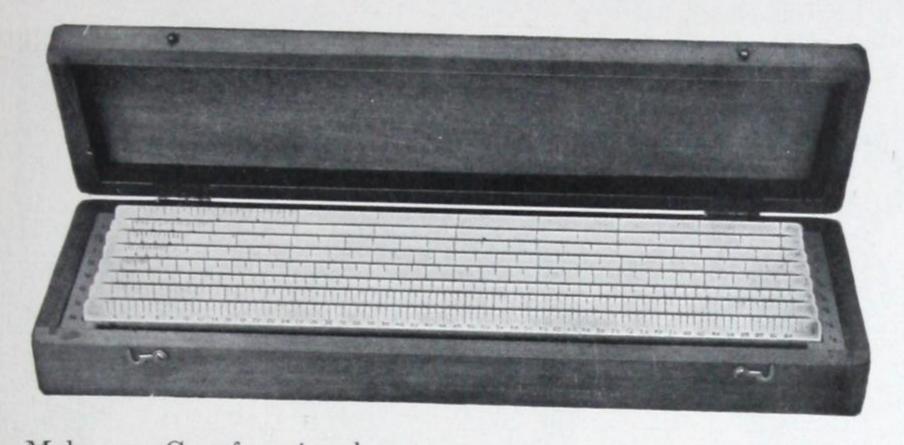
Prices of other plotting scales will be quoted on receipt of specifications. If arrangements other than those shown on United States Geological Survey Chart are desired, sketch should be furnished showing arrangement of lines and numbering desired.



B. K. ELLIOTT COMPANY



MAHOGANY CASES FOR 12" SCALES



EACH

1651	Mahogany Case for	4	scales.	 	 		 									
1652	Mahogany Case for	6	scales.	 	 		 									
1653	Mahogany Case for	8	scales.	 	 								15	. 72		
1654	Mahogany Case for	10	scales.	 												
1655	Mahogany Case for	12	scales.	 	 											
													-		_	

SPECIAL SCALES SKETCH MUST BE FURNISHED

A scale made for the particular work in hand will more than pay for itself by the time saved and convenience it affords. In ordering a special scale the following points should be covered: Shape of scale—flat, opposite bevel, double bevel or pocket size.

Graduated length.

Graduations for each edge.

Arrangement of lines—Open Divided, subdivisions only at end as shown in Figs. 1 and 3; Full Divided, subdivisions carried across entire length of scale as shown in Fig. 2. When "full divided" is specified give measurement of smallest division.

Numbering—Whether the scale is to read left to right only as shown in Fig. 2; right to left only as shown in lower scale of Fig. 3; or from both ends.

0 4 8 12 46 44 42 40	16	20	34	28	88	92
1/8				}	STO	1/4 1/6
	12		i.	01	0 1	964

Fig. 1

Open divided scale. Two graduations on each bevel. One graduation reading left to right, the other graduation reading right to left.

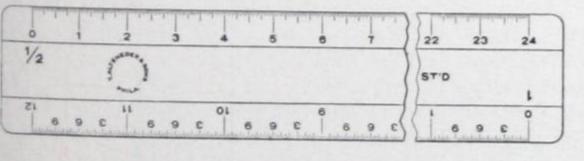


Fig. 2

Full divided. Different scale on each bevel. Both bevels reading left to right.

3/8 STD 3/8 9/E 3 4 5 6 7 8 9 8 29 30 31

Fig. 3

Open divided. Same scale on both bevels. One bevel reading left to right, the other bevel reading right to left.

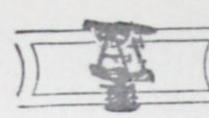
WHERE A SPECIAL ARRANGEMENT OF LINES AND NUMBERING IS DESIRED FURNISH A SKETCH

Care should be taken in making the sketch, as it is a common error to invert the figures when this arrangement is not desired.

The sketch need not be accurately drawn, but it is essential that the value of the divisions be stated.

See Price List Inside Back Cover

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MAP MEASURES







716602



716603

EACH

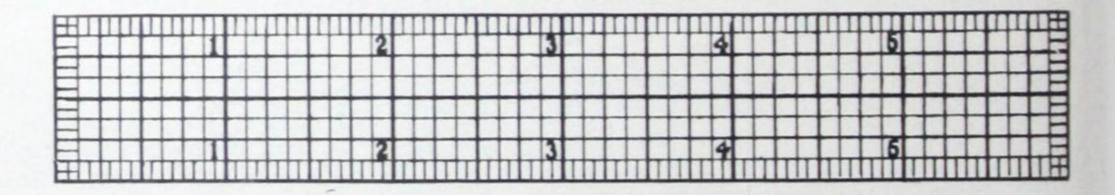
71672

11673

71574

- 716601 Map Measure, watch pattern, dial with two graduations; 12 inches in eighths and 25 feet divided every foot......
- 716602 Map Measure, watch pattern, with zero setting attachment, and 100 feet divided every foot.....
- 716603 Map Measure, universal, with handle. The index hand registers inches to miles, or centimeters to kilometers.....

TRANSPARENT FLEXIBLE RULES



		EACH
716604	Transparent Rule 1 x 6 inches, marked inches	
716605	Transparent Rule 1 x 6 inches, marked tenths and Metric	
	Transparent Rule 1 x 12 inches, marked inches	
716607	Transparent Rule 1 x 12 inches, marked tenths and Metric	
716608	Transparent Rule 2 x 12 inches, marked inches	
716609	Transparent Rule 2 x 18 inches, marked inches	
	Transparent Rule 2 x 18 inches, marked inches and Metric	
716611	Transparent Rule 2 x 18 inches, marked inches, tenths and Picas	

HARDWOOD RULERS

Selected maple finished with three coats of varnish, hand rubbed and polished. Scaled in sixteenths. $1\frac{5}{16}$ inch wide, $\frac{9}{32}$ inch thick with double steel edge.

12 Inch 15 Inch 18 Inch 24 Inch

716612 EACH.....

See Price List Inside Back Cover

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WOODEN T SQUARES

Our T Squares are made of selected materials carefully seasoned and of best workmanship and are guaranteed to give satisfaction.

B.K.ELLIOTT CO.

71671

71671

71673

B.K.ELLIOTT CO.

71672

B.K.ELLIOTT CO.

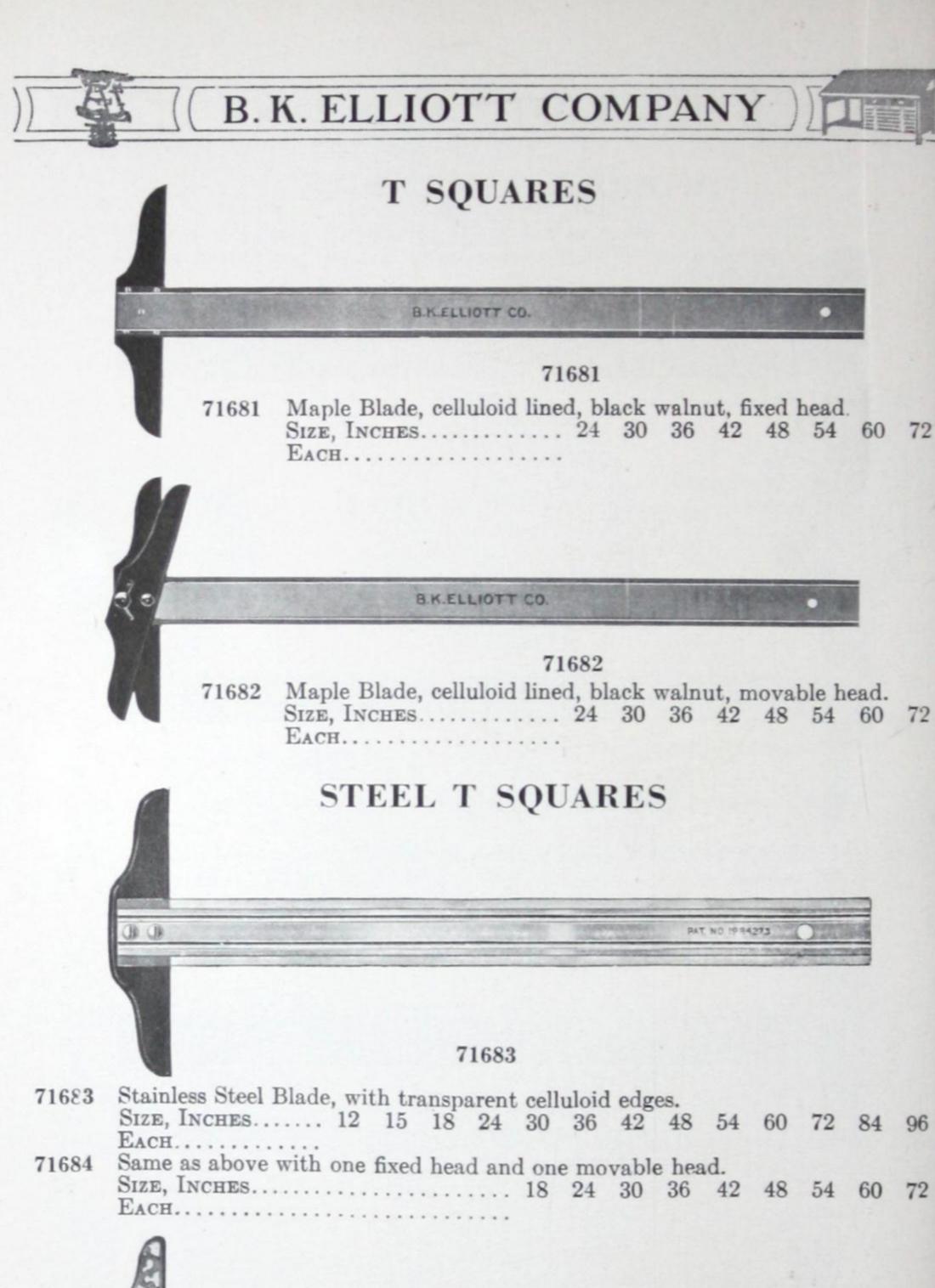
71673

B.K.ELLIOTT CO.

71674

See Price List Inside Back Cover

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The heads of these T Squares are made of aluminum, weighing only from 4 to 6 ounces. The heads are 10 inches long. The blades are made of spring-tempered steel, all nicely finished and guaranteed accurate.

71693

71685 Steel T Square, blade 24 x 1½ inches, 3/64 inch thick.
71686 Steel T Square, blade 30 x 1½ inches, 3/64 inch thick.
71687 Steel T Square, blade 36 x 1½ inches, 3/64 inch thick.

See Price List Inside Back Cover

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PANY

T SQUARES

71691

71691 Tee Square, Fixed Head. Blade and Head of black laminated plastic. Hard drawing edge will withstand abuse. Ideal for school use. 24 inches long. EACH

71692

General Square, Fixed Head. Blade is black laminated plastic, with transparent plastic edges. A rigid, well-Size, Inches...... 18 24 30 36 42 48 54 60

STRAIGHT EDGES

71693

aminated plastic with transparent plastic edges. Easily

42 48 54

ice List Inside Back Cover

PAGE 169 June

WOOD STRAIGHT EDGES

	B.K.ELLIOTT CO.				•	
71701	Mahogany, ebony lined, one edge beveled. Size, Inches	30	36	42	48	54
	B.K.ELLIOTT CO.				•	
71702	Transparent celluloid lined, square edges Size, Inches	36	42	48	54	60

STEEL STRAIGHT EDGES

						-					
71703	Stainless Steel Blade	Transp	arent	Cellu	loid E	dges					
	Size, Inches 18	24	30	36	42	48	54	60	72	84	96
	Еасн										

	B.K.ELLIOTT CO.	pill		.00		
71704	Steel Straight edges, nickel-plated, one edge b	eveled.				
	Size, Inches 12	24	36	48	60	72
	Еасн					

71711

71712

See Price List Inside Back Cover





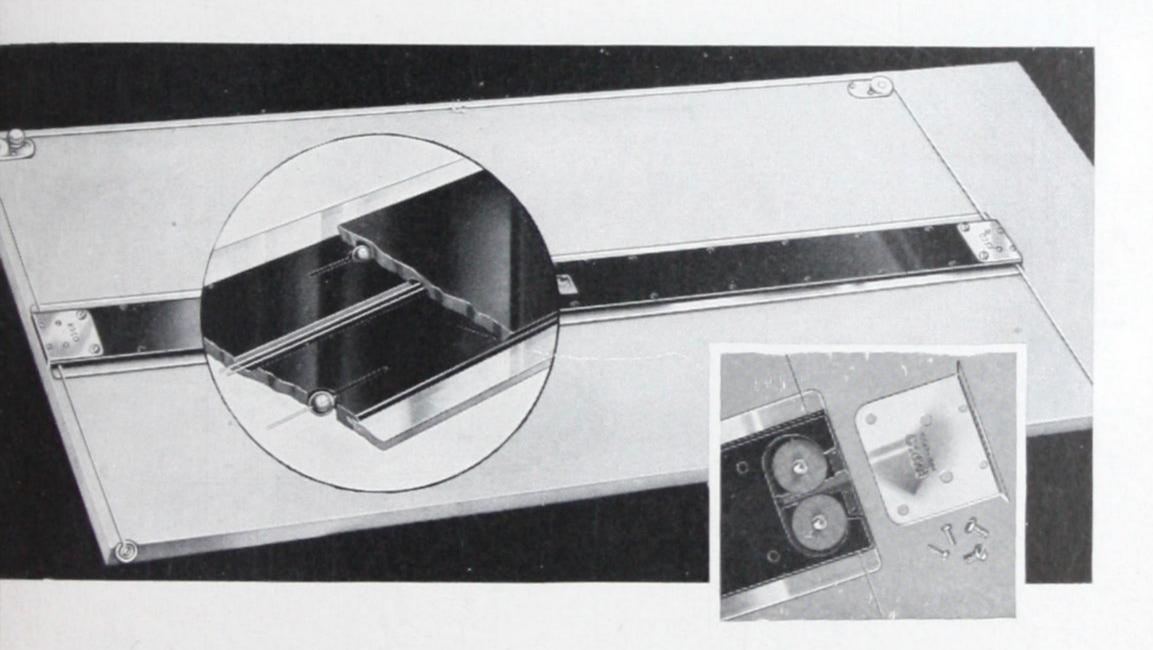
PLASTIC STRAIGHT EDGES

The "Blade-Type" system of straightedge control is rapidly replacing all other types of parallel ruling devices because it is the most accurate and efficient. Esco Ideal, Mobile and Standard Straightedges are designed primarily for use with Blade-Type attachments and when thus equipped are designated as "Parallel Ruling Straightedges".

The four operating pulleys of the Blade-type attachment are mounted on or in the blade itself—two at each end. Cable passes through concealed channel in blade. . aeld at upper corners and lower edge of board with special fittings. All fittings on top of board.

Blade-Type Attachments offer many advantages: (1) Cable operates over four oulleys at 90° turns—total of 360°; (2) Blade can be adjusted to rule parallel lines at ingles; (3) No spring to stretch and cause inaccuracies; (4) Straightedge shorter than loard can be used, allowing space at end of table for instruments, etc.; (5) No part of traightedge projects over drawing board and ends are free for use on tracings longer han board.

Straightedges listed on this page are furnished fitted with attachments.



1711 Ideal Parallel Ruling Straightedge, same blade construction as 71722 but with "Blade-Type" Ruling Attachments fitted to Blade.

Mobile Parallel Ruling Straightedge, same blade construction as 71723, but with "Blade-Type" Ruling Attachments fitted to Blade.

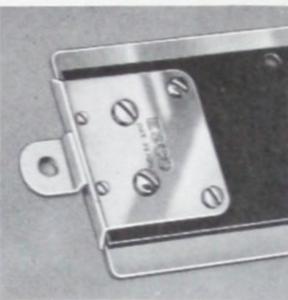
bove Straightedges can be equipped with pencil ledge for small additional charge.

See Price List Inside Back Cover

PLASTIC STRAIGHT EDGES

For Under-Board Type Ruling Attachments or Steel-end Tables; the straightedge covering the full length of Table.

Made of laminated Bakelite, impervious to moisture, practically indestructible; easily cleaned with a damp cloth.



Edges are crystal-clear transparent plastic, .090" thick, with 3/8" projection, set into blade .010" above bottom to minimize contact with drawing.

BLADE-T

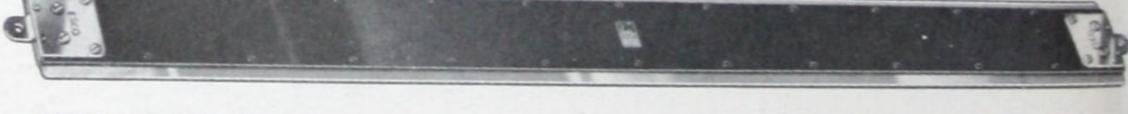
71731

71732

71733

End Plates, as illustrated, are nickeled, attached firmly to the blade, and equipped with adjustable bar which attaches to cable or cord clamp.

0			Y
71721	Regal Straightedge, single thickness Bakelite, 5/32" thick Size, Inches	60	72
			7
71722	Ideal Straightedge, single thickness Bakelite, 5/32" thick, but with strip, adding stiffness, and providing grip for lifting or moving.	1-inch	wide



71723 Mobile Straightedge, same construction as No. 71712 Mobile Straightedge, with built-in retractile rollers, eliminating smudging and providing smooth, easy operation. (See illustration page 171.)

Above Straight edges can be equipped with pencil ledge for small additional charge.

See Price List Inside Back Cover

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PARALLEL RULING ATTACHMENT



Can be used with Black Plastic Straightedges shown on page 172. This attachment converts straightedge into parallel ruling unit. It is necessary only to insert studs into openings provided on straightedge, attach the four pulleys, and cover with housing. Then screw the mounting fittings to the board.

Features of blade-type attachment include: (1) cable operates over 4 pulleys instead of 6 or 8; (2) blade can be lined up with drawing; (3) no unnecessary springs; (4) applicable to straightedges shorter than board; (5) ends of straightedge are free and do not project beyong end of board.

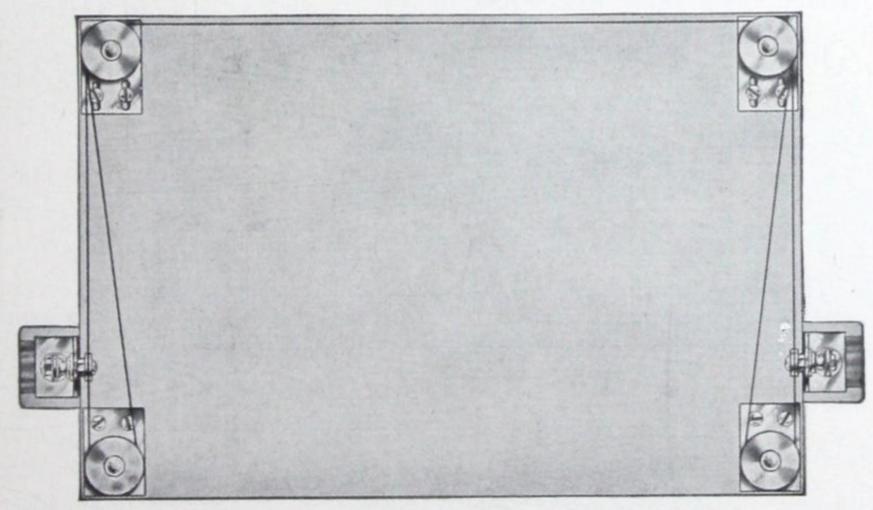
Pulleys have anti-friction bearings, neat, compact. Special 48 strand Metal Braid Cable is standard equipment: furnished complete with 4 pulleys, 4 studs, 2 caps for attaching to blade, and necessary mounting fittings and screws.

Note: To be used with our Mobile, Regal, and Ideal Straightedges. Please specify straightedge since there are two attachments, or specify our attachment numbers.

71731 BLADE-TYPE Parallel Ruling Attachment for mounting on straightedges—30" to 42" Blades 48" to 72" Blades 84" to 120" Blades

PARALLEL RULING ATTACHMENT

UNDER-BOARD-TYPE



Under-Board-Type Parallel Ruling Attachment for use on Tables or Boards with wood end cleats.

The cables cross under the board, and there is a spring to maintain tension. Can be used with any type blade.

71732 Parallel Ruling Attachment.

71733 Parallel Ruling Attachment for use on Tables or Boards having steel end cleats.....

Instructions for mounting furnished with each set of attachments.

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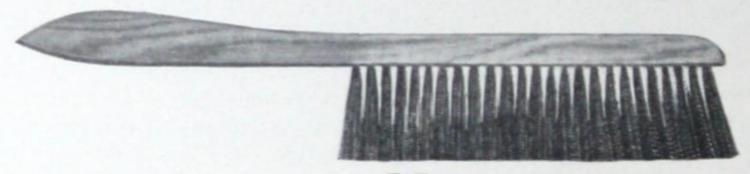
RULING ATTACHMENT CABLE



Monel-Metal Braid Cable is made up of 48 strands of monel-metal wire braided over an oiled cotton core. Outside diameter .037".

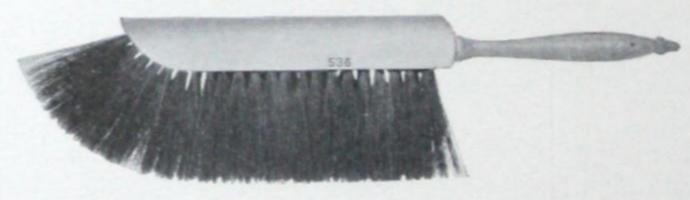
		LACH
71741	Monel-Metal Braid Cable, 100-foot spools	
71743	Monel-Metal Braid Cable, 500-foot spools	
71744	Cloth-covered Copper Cable for older type Ruling Attachments	
	Per Foot	

DRAFTSMEN'S DUST BRUSHES



71745

EACH Doz.



71746

For the drafting room here is the best brush on the market. Long, pliable bristles, wax-set in a strong light-weight wood handle. Look at the shape and see how this brush gets into corners after dirt. Useful every day and will last for years.

EACH DOZ.



71747

EACH DOZ.

See Price List Inside Back Cover

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DAZOR 110 Volt, Power Fr

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DRAFTSMAN'S ADJUSTABLE LAMP

Most flexible light on the market.

Works like the human arm.

DAZOR FLUORESCENT

110 Volt, 60 Cycle

Power Factor 95%

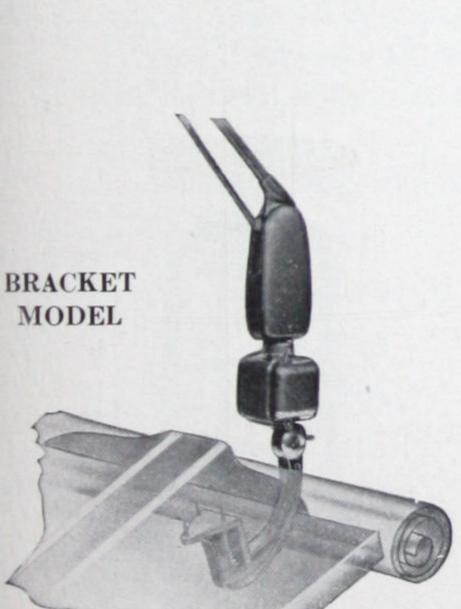
Two 15-watt, 16-inch tubes

Floating Arm: A strong spring force, acting through a shifting fulcrum and parallelogram on both sections of the double-arm, equalizes the varying forces exerted by the

arm, thereby balancing the arm in any position. A patented feature found only in **Dazor Floating Lamps.** The spring mechanism is entirely enclosed within a housing near the base.

Six different connections, responding to finger-tip control and coupled with the double-arm construction, assure extreme flexibility and ease of manipulation to any position without further tightening or locking.

Available with 24-inch and 34-inch arms, extended. Specify length desired when ordering.



Dazor Lamps provide a choice of bases suitable for any desk or drawing table:

Universal Model: can be clamped to any board.

Bracket Model: A
goose-neck iron
bracket forms the
base. Fastened to
under side of
board by screws,
it leaves upper
edge of board
clear Will accome



clear. Will accommodate dust cover.

Table Model: Can be placed where needed on large tables. The weighted base does not require fastening down.

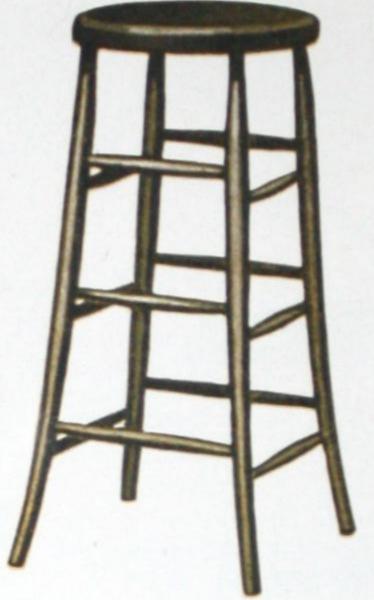
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DRAFTSMAN'S STOOLS







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- Draftsman's Stool, Golden Oak, wood seat, 30 inches high..... 71761
- Draftsman's Stool, Golden Oak, wood seat, 34 inches high..... 71762
- 71763 Draftsman's Steel Stool, wood seat, rigid construction, 26 inches high.



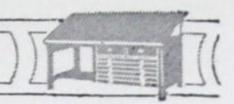
71764



- EACH Draftsman's Steel Stool, 30 inches high, rigid construction, with foot rest, wood seat, 15-inch diameter.....
- Draftsman's Steel Stool, quick adjustment from 26 to 30 inches, wood seat, 15-inch diameter, foot rest, non-skid ball-and-socket feet.....
- 71766 Draftsman's Steel Stool, same as No. 71765 but adjustable from 30 to 34 inches...

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ELLCO HEALTH STOOL

A chair that conforms to the bony structure of the body in a seated position will enforce correct posture. The special shape of the seat relieves the pelvic seat bones by distributing some of the weight of the body on the thighs.

The front of the seat turns down and is rounded to avoid any undue pressure on the blood vessels and nerves under the legs directly under the knee joint.

The back supports the spine in its weakest part just where the support is needed.

Heretofore in nearly all makes of chairs the support of the back was in contact with the body in the region of the shoulder blades. This naturally leaves the weakest part of the back without support, inviting a bent-over posture, constricting the lungs, heart and stomach and other vital organs. Such incorrect posture produces physical fatigue, bodily discomfort, headaches, backaches, nervousness, etc. As a result, personal efficiency is greatly lowered and output much reduced.

These evils are corrected by the use of our Steel Stool Chair. Physical fatigue and muscular strain are eliminated. These chairs provide correct seating, encourage correct posture and allow maximum comfort. You can sit for longer periods in this stool chair without physical discomfort than on any other chair made. This means more and better work from your operatives, more contented employees with less "laying off."

Sturdily built of cold-rolled steel except seat and back support which are wood. Swivel seat has quick height and adjustment of 4½" in one-inch steps

Stools have non-skid ball and socket feet

ELLCO HEALTH CHAIR

Same health features and rigid construction as 71771 Health Stool, but equipped with 2-inch casters.

Recommended for use with Auto-Shift Tables

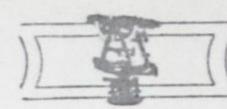
EACH

- 71771 Ellco Health Stool, adjustable from 26 to 30 inches......
- 71772 Ellco Health Stool, adjustable from 30 to 34 inches......
- 71773 Ellco Health Chair, adjustable from 17 to 21½ inches......
- 71774 Ellco Health Chair, adjustable from 19 to 23½ inches.....



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STOOL AND CHAIR CUSHIONS

Seat Cushion—for Stools with Round Seats. Very comfortable sponge rubber, felt-covered, and moulded to fit seat.

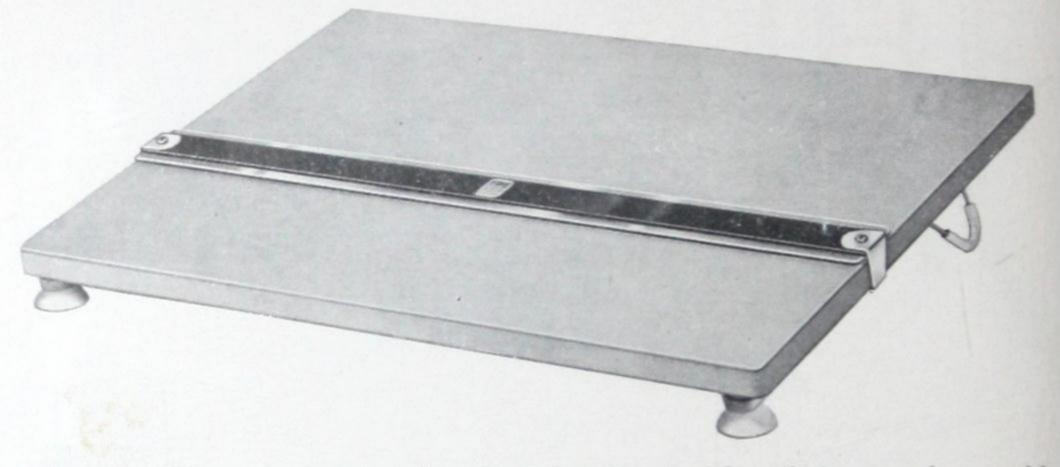
13" 14" 15"

71781 Stool Cushion EACH:

Seat Cushion—for Stools with Chair seats. Kapok filled, Leatherette-covered top and sides, with ribbed cloth bottom. Size 15" x 13½" x 1½".

71782 Chair Cushion

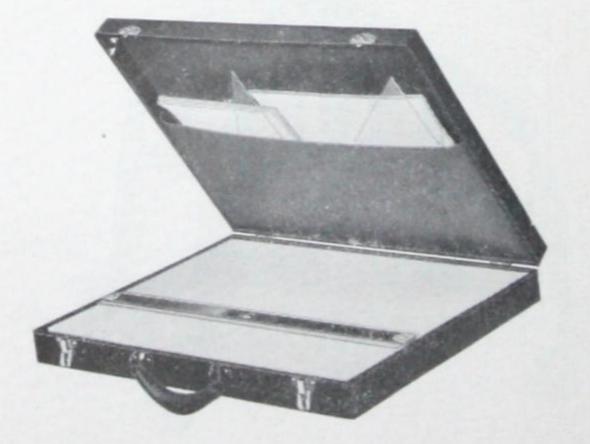
DRAWING KIT



Drawing Kit, professional quality. Drawing Board of five-ply basswood, smoothly sanded, corners rounded. Rubber suction feet.

Parallel Ruling Straightedge of black laminated Bakelite, transparent edges, with attachments on under side of board.

	Each	EACH
71783	Drawing Kit:	
	12 x 14"	24 x 30"
	15 x 20"	24 x 36"
	21 x 26"	30 x 42"



CARRYING CASE

Carrying case of hard fibre construction, covered with black leatherette, made especially for use with 71783 Drawing Kits.

Pocket in lid for papers, triangles, etc.

71784 Carrying Case:

For 12 x 14"......

For 15 x 20".....

For 21 x 26".....

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NEW TRENDS IN DRAFTING ROOM FURNITURE

Streamlining is here to stay, and drafting room procedure has kept pace with these changes placing emphasis on simplicity and utility. New labor-saving devices are in use for producing drawings. More efficiency is demanded of the draftsman and more production is demanded of the department; better methods of reproduction are in use . . . better methods of filing have come into being.

To supply the needs of the modern drafting room, the B. K. Elliott Company presents in the next 37 pages the complete Hamilton line of drawing tables and filing equipment.

The Hamilton Manufacturing Company, makers of Hamilton Drafting Room Furniture, was the first company to bring orderly progress to drafting room filing and equipment problems. It has effectively standardized drafting room files in accordance with paper standards and practical requirements. Its careful study of the needs of the modern draftsman has resulted in many significant contributions, such as the Wood and Steel Tables, the Auto-Shift Table, the Hamilton Shallow Drawer Tracing File, and the Unit Filing System.

In the Hamilton Line we offer you a complete range of drawing tables. There are Pedestal Type Tables for artists, Boards and Horses for temporary work, sturdy, well-built Wood Tables in a wide range of sizes and styles, Steel-Wood Tables, and Auto-Shift Tables. There is a table to meet every need.

For filing blue prints and tracings the Hamilton Unit Plan File System is recommended. In this system provision is made for filing tracings horizontally, vertically or in rolls. Special equipment designed to minimize wear and tear on tracings and to prolong their life is available for filing active or frequently used tracings. Deep Drawer Units are provided for storing inactive drawings. With this selection to choose from, you can solve any filing problem. By selecting the proper units you can provide for anywhere from one thousand to five hundred thousand drawings. The various units are uniform in size and interlock to form a complete system. The B. K. Elliott Company offers the Hamilton Line with confidence in its quality and assurance that it is the most complete and efficient system of drafting room furniture on the market today.

We endeavor to carry a stock of Hamilton Furniture in Cleveland, Detroit and Pittsburgh for immediate shipment. Specially designed goods, however, are shipped direct from the Hamilton Factory at Two Rivers, Wisconsin.



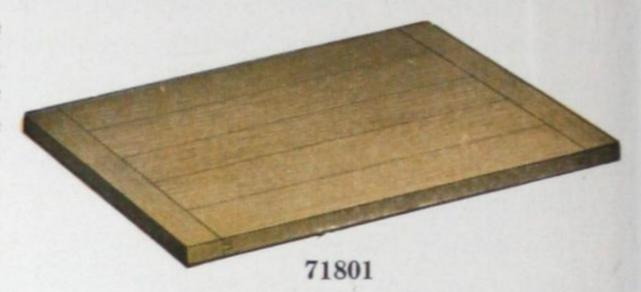


71812

DRAWING BOARDS

Two Drawing Surfaces, 3/4-inch Boards with Cleated Ends

These drawing boards are made in sizes suitable for schools as well as for professional use. They are made of ¾-inch stock and are tongued and grooved as the illustrations show, and with end cleats to strengthen the board. All of the boards are made with a tongue and groove construction.



The board illustrated above is made in the sizes listed below.

	Еасн								
71801	Drawing Boards:	71802	Drawing Boards:						
	16" x 21", Pine		16" x 21", Basswood						
	18" x 24", Pine		18" x 24", Basswood						
	20" x 24", Pine		20" x 24", Basswood						
	20" x 26", Pine		20" x 26", Basswood						
	23" x 31", Pine		23" x 31", Basswood						
	24" x 36", Pine		24" x 36", Basswood						
	31" x 42", Pine		31" x 42", Basswood						

STEEL-EDGE DRAWING BOARD

A new idea in drawing boards . . . steel ends to insure accuracy, smoothness, and permanently true edges. The steel end cleats, set into the ends of the Steel-Edge Boards, are made of 18-gauge steel. They are lead-coated to give a smooth, bright finish. Since steel is stronger than wood, these cleats insure greater strength and accuracy than was ever possible with wood cleats. They are the most notable advance in small drawing board construction in years. Made in pine with two drawing surfaces (front and back).



71803

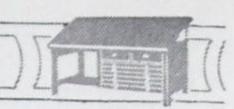
71803 Steel-Edge Drawing Boards:

Еасн	EACH
12 x 17 inches	23 x 31 inches
16 x 21 inches	24 x 36 inches
18 x 24 inches	31 x 42 inches
20 x 26 inches	

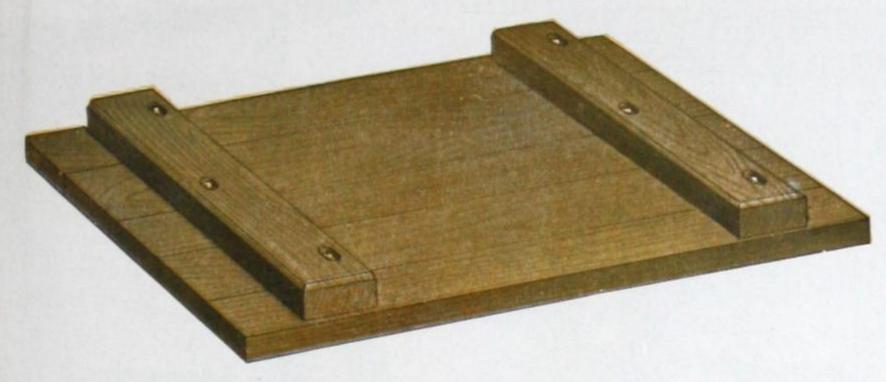
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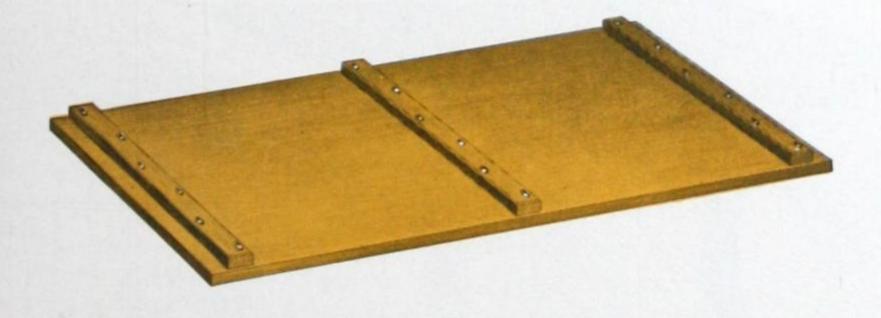
DRAWING BOARDS

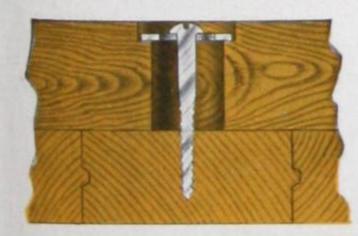


 $1\frac{1}{16}$ " boards with 3" x $1\frac{1}{4}$ " maple cleats and oblong washers, staggered.

Drawing Boards made of specially selected Pine or Basswood lumber, aged and kiln dried. With two hardwood bottom cleats.

	Size	Еасн	Size	EACH
1811	37½ x 48"		43½ x 60″	
	37½ x 54"		43½ x 72"	
	37½ x 60″		48 x 72"	
	37½ x 72"			





Drawing Boards of finest Pine or Basswood, seasoned and kilndried. With three bottom cleats. Cross-section shows how cleats are fastened to board with heavy screws and oblong washers to allow for expansion and contraction. Notice, also, tongue and groove construction.

				Siz	E															E	ACH	
71812	Drawing Board,	431/2	X	84	X	1-	-1/	16		 		 						×				
		48	X	84	X	1-	-1/	16				 							 			
		48	X	96	X	1-	-1/	16		 	*	 										
		431/2	X	96	X	1-	1/	16"		 			 			 						
		48																				

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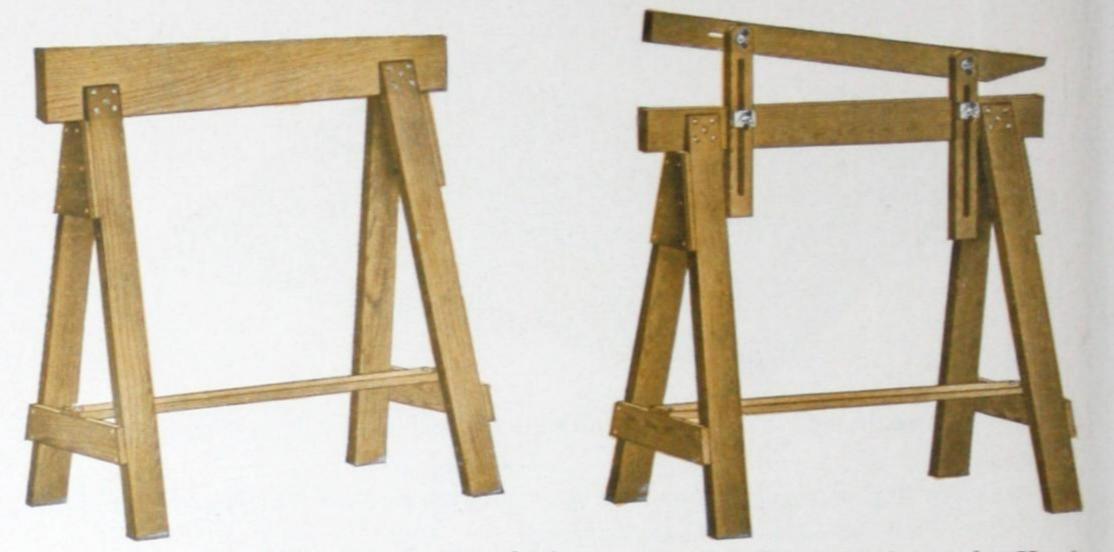
71833

71834

71835

71836

TRESTLES FOR DRAWING BOARDS



For temporary work—can be stored when not in use. Strong and sturdy. Hard-wood—natural Finish.

PER PAIR

71821 Trestles, 38 inches long, 361/8 inches high......

71822 Trestles, 38 inches long, minimum level height 37 inches, maximum level height 47½ inches......



CHAMPION

These tables are very popular with draftsmen in general and are in use in many art studios because of their adaptability to almost any height or position. The top can be raised or lowered from 32 to 42 inches. It can also be tilted to any angle and nearly vertically for use as an easel. After the table is adjusted, for height or slant, the handwheel at top and the starwheel below, are tightened which makes the table extremely rigid due to the rods which run through the table. When tightened, the handwheels draw the table up very tightly.

		EAC	H
71823	(110)	31 x 42 x 1½", height 32" to 42"	
71824	(111)	$36 \times 48 \times 1_{\overline{16}}^{1}$ ", height 32" to 42"	
71825	(112)	36 x 60 x 1½", height 32" to 42"	
71826	(113)	42 x 72 x 1½", height 32" to 42"	
71827	(114)	42 x 84 x 1 ¹ / ₁₆ ", height 32" to 42"	

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NOTE—Numbers shown in (—) are manufacturers' numbers

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HAMILTON-HOFFMAN DRAWING STANDS AND ATTACHMENTS

The Hoffman Stands are made in 2 models . . , the No. 71831 Peerless Stand, a substantial, high quality, medium priced, artist's stand and the No. 71832 Sterling Stand, a lighter model, similar in design, lower in price but a first class stand in every respect.

Standard equipment on both include the Universal Swivel Head,

71832

which allows the board (board is extra, price depends on size selected) to be tilted to any angle and revolved to any position.

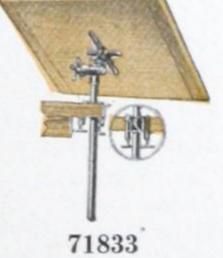
Either of these stands can be equipped with a variety of accessories, such as the combination drawer and tray, as shown on the No. 71831 Peerless Stand, or the tray only, as shown on the No. 71832 Sterling Stand as extras.



The size of boards used is optional and is extra. For cost see No. 71801 Board for selection. Page No. 180.

No. 71833 Attachable Universal Adjustable Drawing Board Bracket.

This bracket permits the artist to place his drawing board on the edge of any table that is 2" or less in thickness. Used with Universal Swivel Head, it allows a range of 17" in height . . . that is, it can be raised 17" higher than

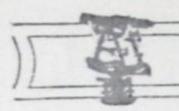


its minimum height, which, of course, would be approximately the height of the table to which it is attached.

			EACH
71831	(430)	Peerless Stand with Universal Swivel Head only	
71832	(432)	Sterling Stand with Universal Swivel Head only	
71833	(434)	Attachable Bracket with Universal Swivel Head only	
71834	(436B)	Varnished Oak Drawer and Tray	
71835	(436C)	9" x 13" Varnished Oak Tray	
71836	(436K)	Bracket Clamp only	
	37		

NOTE—Numbers shown in (—) are manufacturers' numbers

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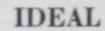
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HAMILTON DRAWING TABLES





The Hamilton Ideal is one of our largest selling tables, because its quality construction makes it an exceptional value at a moderate price.

Height adjustment 32" to 42"... controlled by single large winged hand nut in base. Top may be tilted from horizontal to vertical by adjustment of one hand wheel. Top has adjustable front ledge for use when board is vertical.

Top is of selected soft wood with hardwood cleats underneath. Finished on both sides with top side sanded smooth. Base is hardwood, in light golden oak finish. Metal parts are black enameled. Shipped knocked down.

			LACH
718401	(157)	Ideal Drawing Table, size 24 x 32"	
718402	(158)	Ideal Drawing Table, size 31 x 42"	
718403	(159)	Ideal Drawing Table, size $37\frac{1}{2} \times 48''$	
718404	(159-A)	Ideal Drawing Table, size $37\frac{1}{2} \times 54''$	
718405	(160)	Ideal Drawing Table, size $37\frac{1}{2} \times 60''$	
718406	(160-A)		
718407	(160-B)	Ideal Drawing Table, size 43½ x 84"	

MONARCH

Monarch tables are low in cost . . . high in quality.

This top is made of 116" clear selected basswood, kiln-dried. thoroughly seasoned, scientifically treated. Hardwood end cleats attached with heavy screws and oblong washers to allow for expansion and contraction of drawing surface.

Slope of top is adjustable with simple positive raising devices. Table is 37" high.

718408

Blueprint and reference compartment beneath top.

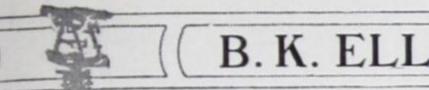
Tool drawer divided into convenient compartment and has sliding tool tray.

Full width hardwood apron at front edge mounted to allow 5 space for handling long tracings.

Finished in light golden oak.

			EACH
718408	(166)	Monarch Drawing Table, size 37½ x 48"	
118409	(107)	Monarch Drawing Table, size 37½ x 54"	
110410	(108)	Monarch Drawing Table, size 37½ x 60"	
718411	(109)	Monarch Drawing Table, size 37½ x 72"	
	N	OTE—Numbers shown in (—) are manufacturers' numbers	
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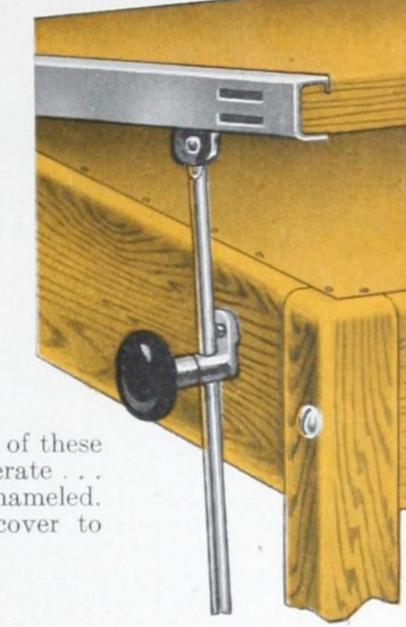




HAMILTON DRAWING TABLES

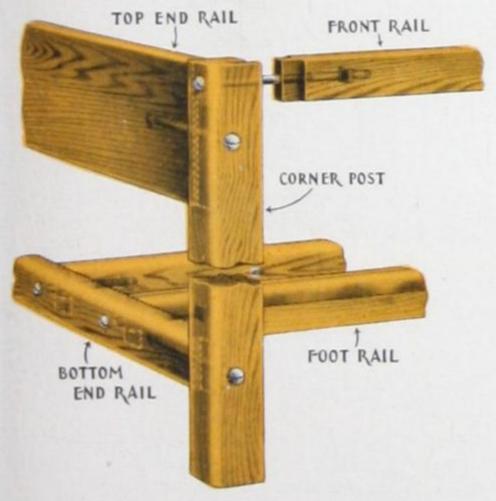
You get more for your money with Hamilton 4-Post Tables because they are efficient, rigid, vibrationless, convenient, comfortable, and accurate. The seasoned, selected wood tops are smooth, level, and square. Zinc-plated steel end cleats hold them true. All corners are rounded for better appearance. The easy-running drawers have non-warping Welded Fibre Board drawer bottoms. A Welded Fibre panel covers the

base of adjustable top tables to keep dust out of drawers. Standard height is 37". All tool drawers have locks. Body of table is finished light golden oak. Drawing board has one coat of specially thinned varnish and top side is sanded smooth. Tables shipped knocked down. Extremely rigid after assembling, with all bolts tightened.



POSITIVE RAISING DEVICE

Each adjustable Hamilton 4-Post Table has two of these simple, positive raising devices. They are easy to operate . . . positive and dependable. Made of steel, black enameled. Illustration also shows Composition Board table cover to keep dust out of drawers.



The ends are mortised and tenoned and bolted

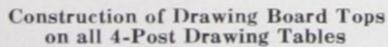
construction of 4-Post Drawing Tables.

Illustration shows the strong bolted knocked-down

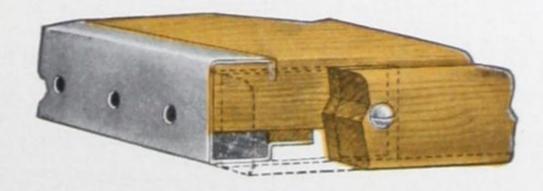
together at the factory. As the tables are shipped knocked-down, the front and back rails, and foot rails are inserted in the mortises in the ends when assembling the table. The bolts are then inserted and drawn up tight.

This makes a very rigid drawing table. Full instructions are furnished with every table for setting up.

Note that corner of table top and legs are rounded. Brass angle on foot rail to prevent wear.



The tops are equipped with zinc plated metal end cleats grooved into top of board and fastened at bottom with screws through oblong slots. There is also an oak apron on front of board. Board is of selected California sugar pine, with tongue and groove construction, varnished all over, top side sanded smooth.







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HAMILTON DRAWING TABLES



			EACH
718601	(255A)	37½ x 60, solid top, no drawer	
718602	(225)	37½ x 72, solid top, no drawer	
718603	(240)	43½ x 84, solid top, no drawer	
718604	(256)	37½ x 60, solid top, one tool drawer, 10½ x 26¼ x 3¾	
718605	(226)	371/2 x 72, solid top, one tool drawer, 101/2 x 261/4 x 33/4	
718606	(240A)	43½ x 84, solid top, one tool drawer, 10½ x 26¼ x 3¾	
718607	(250A)	37½ x 60, adjustable top, no drawer	
718608	(220)	37½ x 72, adjustable top, no drawer	
718609	(230)	43½ x 84, adjustable top, no drawer	
718610	(251)	37½ x 60, adjustable top, one tool drawer, 10½ x 26¼ x 3¾	
718611	(221)	371/2 x 72, adjustable top, one tool drawer, 101/2 x 261/4 x 33/4	
718612	(230A)	43½ x 84, adjustable top, one tool drawer, 10½ x 26¼ x 3¾	



		Еасн
718613	(255)	37½ x 60", Solid Top, tool drawer 10½ x 26¼ x 3¾", shallow drawer 36½ x 26¼ x 2" inside
718614	(226A)	37½ x 72", Solid Top, tool drawer 10½ x 26¼ x 3¾", shallow drawer 48 % x 25 x 2" inside
718615	(241)	43½ x 84", Solid Top, tool drawer 10½ x 26¼ x 3¾", shallow drawer 59¼ x 32 x 2" inside
718616	(250)	37½ x 60", Adjustable Top, tool drawer 10½ x 26¼ x 3¾", shallow drawer 36½ x 26¼ x 2" inside
718617	(221A)	37½ x 72" Adjustable Top, tool drawer 10½ x 26¼ x 3¾", shallow drawer 48 x 25 x 2" inside
718618	(231)	43½ x 84" Adjustable Top, tool drawer 10½ x 26¼ x 3¾", shallow drawer 59¼ x 32 x 2" inside

NOTE-Numbers shown in (-) are manufacturers' numbers

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HAMILTON DRAWING TABLES

4-Post Table With One Tool Drawer (Including lock, two keys, and tray) and one Shallow Drawer and 2-Drawer Unit No. 189.



NOTE-Parallel Ruling Attachment, shown on table, can be furnished on all tables extra.

		LACE
718701	(255D)	$37\frac{1}{2} \times 60^{\circ\prime\prime}$, Solid Top, tool drawer $10\frac{1}{2} \times 26\frac{1}{4} \times 3\frac{3}{4}^{\circ\prime\prime}$, Shallow drawer $36\frac{1}{2} \times 26\frac{1}{4} \times 2^{\circ\prime\prime}$, Supply drawer $10\frac{3}{16} \times 25 \times 3\frac{15}{16}^{\circ\prime\prime}$, File drawer $9\frac{5}{8} \times 25 \times \frac{12}{16}$ inside
718702	(250D)	371/2 x 60", Adjustable Top, drawers same as 718701
718703	(221AD)	37½ x 72", Solid Top, same drawers as 718701 except shallow drawer 48 % x 25 x 2" inside
718704	(226AD)	37½ x 72", Adjustable Top, drawers same as 718703
718705	(231D)	43½ x 84", Solid Top, same drawers as 718701 except shallow drawer 59 13 x 32 x 2" inside
718706	(241D)	431/2 x 84", Adjustable Top, same drawers as 718705



4-Post Table with two Tool Drawers

— interchangeable (one including lock, two keys, and tray) and one Shallow Drawer.

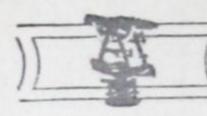
EACH

			EAC
718707	(227)	37½ x 72", Solid Top, tool drawers 17 % x 25 x 3 %", shallow drawers 37 % x 25 x	
		inside	
718708		37½ x 72", Adjustable Top, otherwise same as 718707	
718709		43½ x 84", Solid Top, drawers same as 718707	
718710	(235)	43½ x 84", Adjustable Top, otherwise same as 718707	
718711	(242)	431/2 x 84", Solid Top, tool drawers 20 x 32 x 3 3/8", shallow drawer 42 3/8 x 32 x 2" inside	
718712	(232)	43½ x 84", Adjustable Top, otherwise same as 718711	

NOTE-Numbers shown in (-) are manufacturers' numbers

See Price List Inside Back Cover

Some Page 187 Johnson





HAMILTON DRAWING TABLES



4-Post Table with two Tool Drawers

- interchangeable (one including lock, two keys, and tray) and three Shallow Drawers.

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		EACH
718801	(228)	37½ x 72" solid top, tool drawer 17 % x 25 x 3 %", shallow drawers 37 % x 25 x 2"inside
718802	(223)	37½ x 72", adjustable top, otherwise same as 718801
718803	(246)	43½ x 84", solid top, drawer sizes same as 718801
718804	(236)	43½ x 84", adjustable top, otherwise same as 718801
718805	(243)	43½ x 84", solid top, tool drawers 20 x 32 x 3¾", shallow drawers 42¾ x 32 x 2" inside
718806	(233)	43½ x 84", adjustable top, otherwise same as 718805

4-Post Table with two Tool Drawers

- interchangeable (one including lock, two keys, and tray) and six Shallow Drawers.



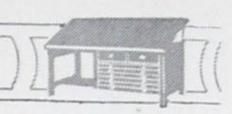
		DAU
718807	(229)	37½ x 72", solid top, tool drawers 17 ½ x 25 x 3 ¾", shallow drawers 37 ½ x 25 x 2" inside
718808	(224)	37½ x 72", adjustable top, otherwise same as 718807
718809	(247)	43½ x 84", solid top, drawer sizes same as 718807
718810	(237)	43½ x 84", adjustable top, otherwise same as 718807
718811	(244)	43½ x 84", solid top, tool drawers 20 x 32 x 3¾", shallow drawers 42¾ x 32 x 2" inside
718812	(234)	43½ x 84", adjustable top, otherwise same as 718811

NOTE-Numbers shown in (-) are manufacturers' numbers

See Price List Inside Back Cover

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HAMILTON STEELWOOD DRAWING TABLES

These Steelwood Drawing Tables offer a major improvement in the design and construction of 4-post drawing tables in many years. As the name suggests, they offer a happy combination of the best practice in both steel and wood construction of traditional Hamilton quality.

Built to withstand many years of hard, continuous usage, their cost is no higher than the 4-post tables of all wood construction. Their framework of welded steel construction insures permanent rigidity, joints that can never become loose or wabbly, freedom from annoying repairs. The drawer units are of the proven Hamilton wood construction, while the drawers themselves have steel fronts with gray finish to harmonize with the all-steel body. Foot rail has a brass edge and all raising devices are zinc plated.

Hamilton Steelwood Tables are made in four popular sizes, in a variety of drawer combinations to meet all drafting room requirements. They are finished in gray baked enamel.

The drawer arrangement illustrated is probably the most popular and widely used arrangement ever developed for a 4-post drawing table. It consists of one large shallow drawer for tracings and papers, at the left, and a generously proportioned tool drawer, at the right, equipped with lock, sliding tool tray, and compartment for ink bottles. For drawer dimensions and other details, see specifications below.



		Тор	Drawers	WIDTH	DEPTH	Неіднт	Елен
71891	(1802)	37½ x 60"	Long Drawer		281/8		
71000	(1000)	0=1/ =0#	Tool Drawer with Tray.		$27\frac{1}{4}$		
71892	(1806)	$37\frac{1}{2} \times 72''$	Long Drawer	413/8	271/4		
71893	(1808)	43½ x 72"	Tool Drawer with Tray . Long Drawer	$17\frac{5}{8}$ $41\frac{3}{8}$			
			Tool Drawer with Tray.	175%		- M	
71894	(1812)	43½ x 84"	Long Drawer	533/8	$31\frac{7}{8}$	11/2	
			Tool Drawer with Tray.	$17\frac{5}{8}$	24	$3\frac{3}{4}$	

Lock on all tool drawers

(The parallel rule and attachment shown are extra)

NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

Some Page 189 Joseph





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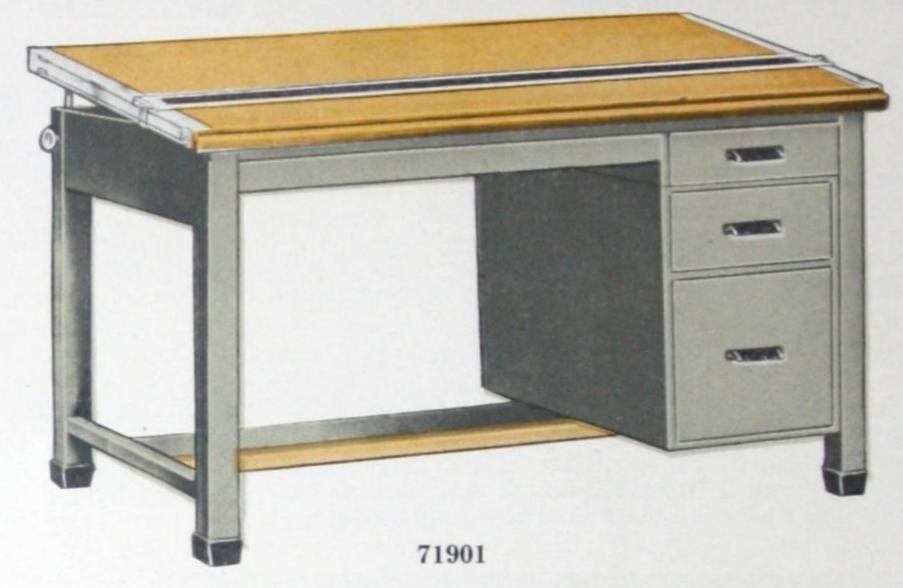
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HAMILTON STEELWOOD DRAWING TABLES



T1901 (1802-D) 37½ x 60″, same as No. 71891, but with No. 71912 Drawer Unit (page 191).

71902 (1806-D) 37½ x 72″, same as No. 71892, but with No. 71913 Drawer Unit (page 191).

71903 (1808-D) 43½ x 72″, same as No. 71893, but with No. 71913 Drawer Unit (page 191).

71904 (1812-D) 43½ x 84″, same as No. 71894, but with No. 71913 Drawer Unit (page 191).



		Тор	Drawers	WIDTH	DEPTH	HEIGHT	EACH	
71905	(1807)	37½" x 72"	Tool Drawer with Tray	175/8	25	33/8		
			Small Drawer (upper left)		25	33/8		
			Long Drawer	375/8	25	2		
71906	(1816)	43½ "x 84"	Tool Drawer with Tray	20	32	33/8		
					32	33/8		
			Long Drawer		32	2		

(The parallel rule and attachment shown are extra)

NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

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HAMILTON STEELWOOD DRAWING TABLES WITH STATIONARY REFERENCE SPACE



Here is a Steelwood Table that gives you a stationary top surface for reference or instruments in addition to an adjustable drawing board top. If your drafting room space is limited, you will find this table an efficient space-saver. For art work, the stationary surface is especially useful as water jars and paints can be safely placed in it.

The adjustable portion of the top is a 36 x 48" wide California Sugar Pine drawing surface with steel end-cleat reinforcement. To adjust it, turn the lever on the side of the table and set it to any angle up to 46°. No hand wheels to adjust or tighten. The top locks rigidly at the desired angle.

The stationary top is $22\frac{3}{4}$ " wide by 36" deep. It is made of high quality pine with maple end cleats. The heavy welded steel base (regular lifetime Steel-wood construction) has a $24\frac{1}{2}$ " x $41\frac{3}{8}$ " x $1\frac{9}{16}$ " reference drawer and a 24" x $17\frac{5}{8}$ " x $3\frac{3}{4}$ " tool drawer with lock and tool tray.

EACH

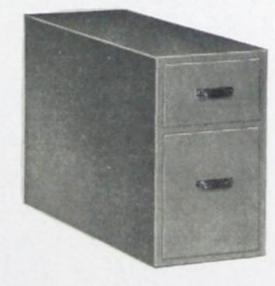
71911 (1800) 36" x 48" Steelwood Drawing Table......

AUXILIARY DRAWER UNITS FOR HAMILTON STEELWOOD TABLES

A Two-Drawer Unit that can easily be added to Steel-wood Tables. Made of wood, the drawers have steel fronts. Finished in olive green to match table.

71912 For **71891** and **71901** Tables. Tool Drawer $10\frac{1}{16}$ x 25 x 6"; Catalog Drawer $9\frac{3}{4}$ x 25 x $12\frac{11}{16}$ "..... Each

71913 For Tables 71892, 71893 and 71894. Tool Drawer 17½ x 25 x 6"; Catalog Drawer 17 x 25 x 12½. Each



71912

NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

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HAMILTON STEELWOOD DRAWING TABLES

Especially designed to conserve space in the drafting room. A row of these tables provides each man with a fixed height drawing surface and a reference surface as shown in the detail drawing at lower right. The drawing board is adjustable from horizontal to vertical or any intermediate angle, but its height is fixed. The board is $36\frac{1}{2}$ high when it is in the flat position. The reference side of the table has a tool drawer equipped with lock and tool tray. Welded construction in the sturdy steel base assures you of rigidity and long life. The base is $56\frac{1}{2}$ wide and $30\frac{5}{8}$ from front to back. Wood shoes on the legs prevent injury to the floor when moving tables.

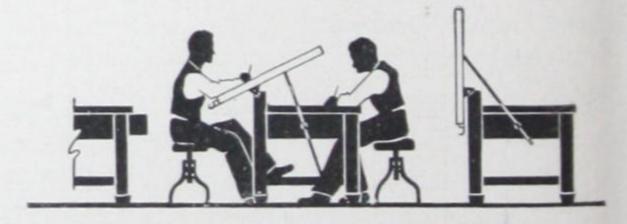
The drawing board top is made of California Sugar Pine, soft and evenly grained. It has steel end cleats for additional rigidity and strength and a pencil trough at the front.



	EACH	
71921 (1801)	Table with 36" x 60" Top	
71922 (1801-A)	Table with 36" x 72" Top	
71923 (1801-B)	Table with 42" x 72" Top	

More Working Space In Less Floor Space

The rear or reverse side provides a working surface and tool drawer. The illustration shows how both sides can be efficiently used when tables are placed in a row, thus conserving space and increasing efficiency in the drafting room.



NOTE-Numbers shown in (-) are manufacturers' numbers

See Price List Inside Back Cover

Some Page 192 Johnson

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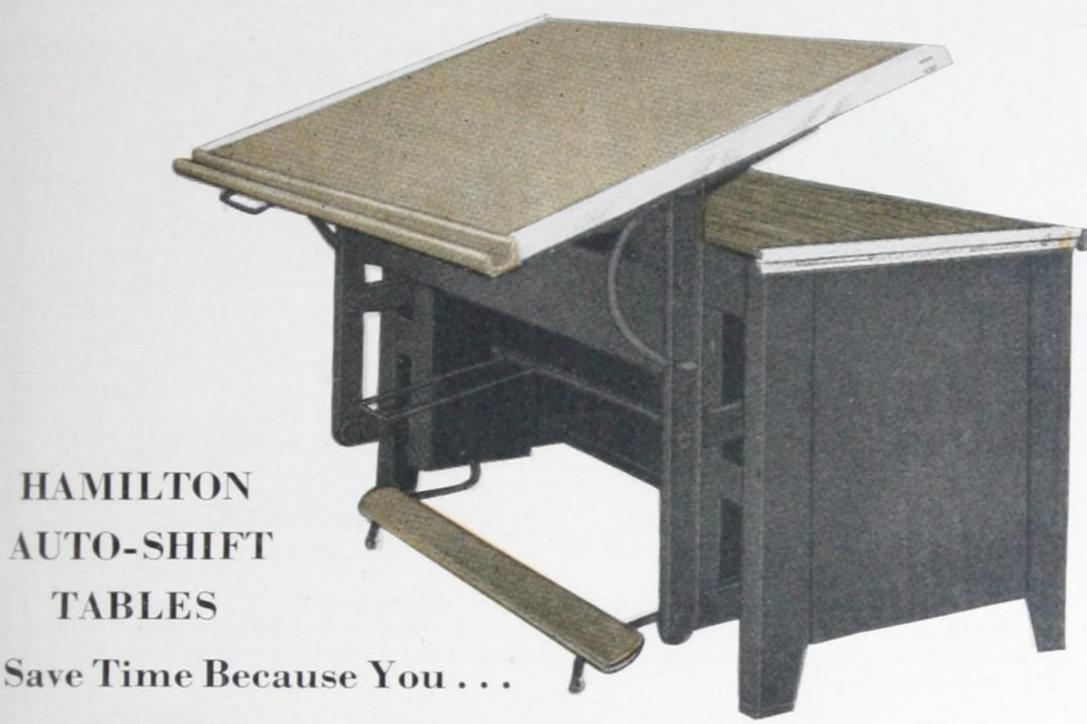
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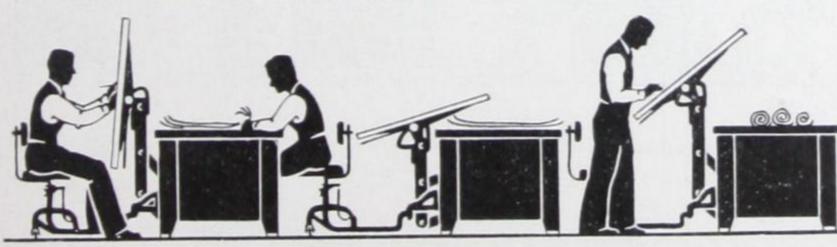
HAMILTON AUTO-SHIFT TABLES SPEED PRODUCTION



- Change Board Slope Instantly
- Change Board Height Instantly
- Work from Standing or Sitting Position
- Bring Any Part of Drawing to You
- Have Efficient Drawing Conferences
- Have Ample Reference Space
- Draw with Real Comfort and Efficiency

You can step up your drafting speed when you use **Hamilton** Auto-Shift Drawing Tables. The drawing surface is instantly adjusted to any convenient working height and slope. The heavy California Pine drawing board is counter-balanced... you just step on a pedal and with finger tip pressure set the board at the desired height. Slope changes are easily and readily made. Press a lever and swing the board to any angle. Board locks in desired position and cannot slip... You can work comfortably on any part of the drawing surface while seated or standing. You can instantly adjust the board from 35" to 44" (center height) and to any slope from horizontal to vertical. Board has plated steel end cleats.

It not only saves operating costs but conserves valuable floor space. Each engineer has a large clear working surface and a full size reference desk all in a convenient position . . . and it requires only 36¼ square feet per man. The result . . . less fatigue, and faster and better work . . . all at reduced costs.







HAMILTON AUTO-SHIFT TABLES STEEL BASE—CALIFORNIA SUGAR PINE TOP



ADJUSTABLE REFERENCE SURFACE

This view of an Auto-Shift shows you the 30" x 60½" adjustable hardwood reference surface, tool drawer, and the shallow reference drawer. The adjustable reference surface is made to slide forward 7½", thus increasing the reference working area. When Auto-Shifts are used in a row (one in front of the other), each draftsman uses the drawers and reference surface of the table directly behind him. There is one shallow reference drawer size 36½" wide 25½" deep and 1½" high and one tool drawer 9¾" wide, 25¾" deep and 4¾" high inside.

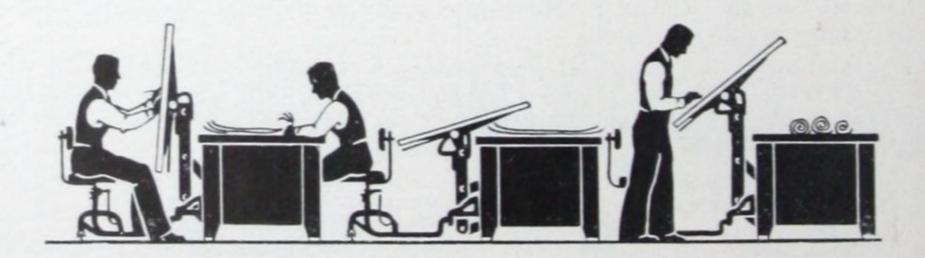
No. 71941 Reference Desk is used to supply a reference surface for the last draftsman in a row of Auto-Shifts. It looks like a standard office desk with a 30¾ x 60½ wood top. It has a reference drawer and tool drawer and is similar to the base of the standard Auto-Shift without drawing top.

TWO-DRAWER FILING UNIT

2- drawer filing unit No. 71945, with one drawer 9\%" x 17" x 4" and a file drawer 9\%" x 17" x 8", can be supplied as an extra. This unit fits under the tool drawer of tables or 71941 Reference Desk.



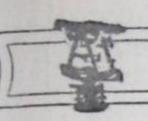
			EACH
71941	(1817)	Reference Desk, 30 x 60 inch top	
71942	(1818)	Auto-Shift Table, 371/2 x 60 inch	
71943	(1819)	Auto-Shift Table, 37½ x 72 inch	
71944	(1820)	Auto-Shift Table, 431/2 x 72 inch	
71945	(1823)	Two-drawer Unit	



NOTE-Numbers shown in (-) are manufacturers' numbers

See Price List Inside Back Cover

www. PAGE 194 Johnson





HAMILTON FLUORESCENT "SHADOWLESS" TRACING TABLE



71951

- **★ NO GLARE**
- ★ NO EYE-STRAIN
- * LOWER LIGHT BILLS
- * COOL WORKING SURFACE
- * EVEN DISTRIBUTION OF LIGHT

Fluorescent Table—for tracing from blue prints, soiled tracings, etc., it is indispensible. With it, tracings can be made accurately at a great saving of time.

Large 24" x 36" plate glass tracing surface, sandblasted underneath to diffuse light. Illuminated by two 30-watt 36", T-8 Daylight Fluorescent Lamps which are complete with ballast, starter, and 10 feet of cord. Top tilts to desired slant, as shown, and white enamel reflector moves with the top. Top is of selected basswood 36" x 48" with one coat of varnish. Base is hardwood, golden oak finish. Height is 37". One roll of Scotch Tape is supplied. 110-volt, 60-cycle alternating current only.

Our regular parallel ruling attachment can be attached to this table to advantage.

EACH

71951 Fluorescent Table.....

See Price List Inside Back Cover

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JUNIOR TRACING AND PHOTO-RETOUCHING TABLE



Fluorescent Table-Equipped with two 15-watt, 18", T-8 Daylight Fluorescent Lamps for cool, even, glareless light. Ballast, starter and 10 feet of cord included. Plate glass center is 22 x 24", sandblasted on bottom side. Top overall is 31" x 32". Adjustable in slope and in height (323/4" x 421/4"). Entire top can slide forward or backward 151/2" on channel suspension. A roll of Scotch Tape is included. White enamel reflector pan, basswood top, hardwood frame. For 110-volt, 60-cycle alternating current only.

EACH

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719702

719793

719704

119705

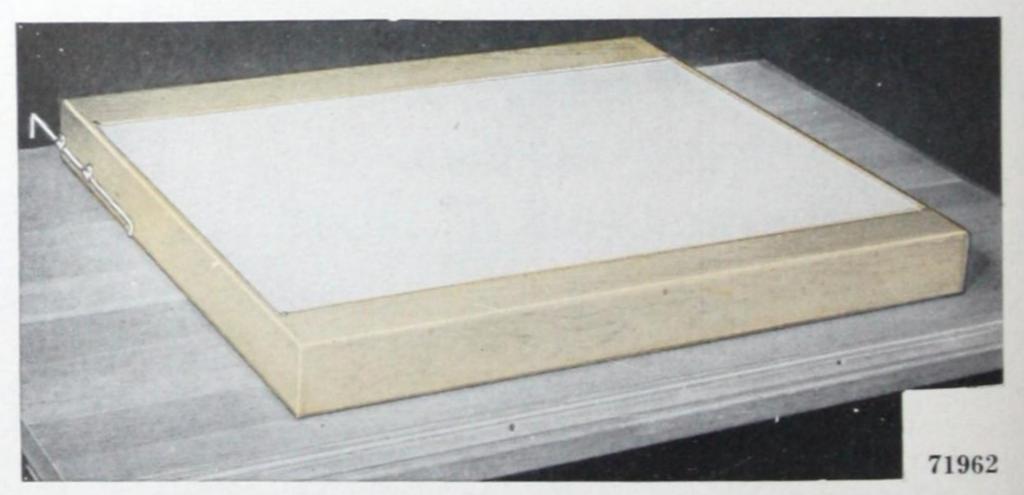
719706

719707

719715

719716

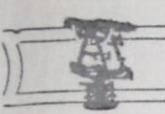
PORTABLE TRACING BOARD



Portable Tracing Board—Equipped with two 30-watt, 36", T-8 Daylight Fluorescent Lamps. Plate glass tracing surface is 24" x 36¾". White enamel reflector pan helps to distribute the light more evenly. Adjustable stop rods hold the board in place when used on an inclined drawing surface. It can be used on any drawing surface. A leather handle bolted to the top edge makes it easy to carry. The board is made of select white pine, finish natural color manolac. For 110-volt, 60-cycle alternating current only. It is a compact space-saving unit easy to use and inexpensive to buy.

See Price List Inside Back Cover

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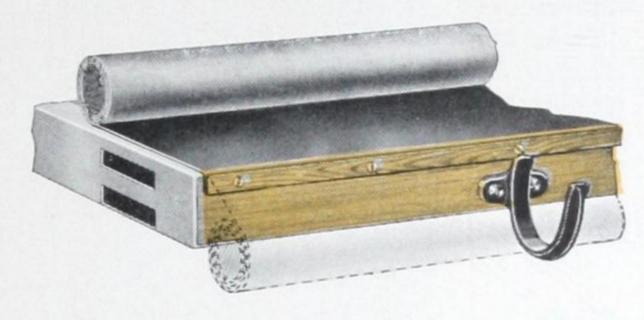


EXTRAS FOR DRAWING TABLES

DUST COVER



Protect your drawings overnight against dust and dirt with a
Hamilton Dust Cover. It neatly
covers your table as shown above.
The weighted roller at the bottom
is to hold the cover snug to the
table. The roller and black waterproofed cloth cover can be rolled to
the back of the table, out of the
way, into suitable holding brackets.
The back view of the table top at
right shows a cover rolled almost to



the back and the dotted lines show how the roll rests in the holding brackets.

Dust covers can be furnished to roll the long way of the board if desired. Specify when ordering.

DUST COVERS MOUNTED ON ROLLERS

	Size of Board Each		Size of Board	EACH
719701	24" x 32" Dust Cover	719708	43½" x 72" Dust Cover.	
719702	31" x 42" Dust Cover	719709	43½" x 84" Dust Cover.	
719703	37½" x 48" Dust Cover		48" x 72" Dust Cover.	
719704	37½" x 54" Dust Cover		48" x 84" Dust Cover.	
719705	37½" x 60" Dust Cover		48" x 96" Dust Cover.	
719706	37½" x 72" Dust Cover		48" x 108" Dust Cover.	
719707	43½" x 60" Dust Cover	719714	48" x 120" Dust Cover.	
719715	Elliott, Black Oil Cloth for dust cov	er 50" wid	le, without roller PER YAI	RD



Auxiliary Unit.

AUXILIARY UNIT

Unit illustrated provides extra supply drawer and larger file drawer for catalogs and correspondence. Large drawer has follower to hold catalogs and papers upright. Finished to match 4-Post Wood Tables.

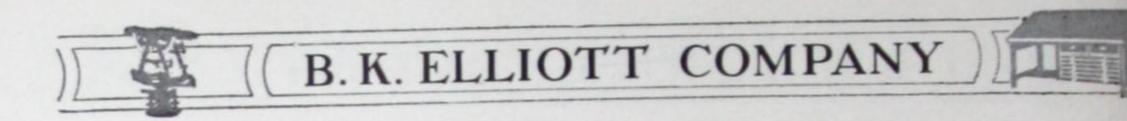
Overall Dimensions $12\frac{13}{16}'' \times 27\frac{7}{16}'' \times 19\frac{1}{2}''$ Supply Drawer $10\frac{3}{16}'' \times 25'' \times 3\frac{15}{16}''$ inside File Drawer $9\frac{5}{8}'' \times 25'' \times 12\frac{11}{16}''$ inside.

Will fit under tool drawer of all 4-Post Tables.

See Price List Inside Back Cover

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EACH



GENERAL DESCRIPTION FOR REGULAR LINE

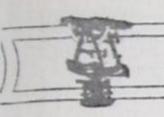
OAK PLANFILE UNITS

		SPECIFI	CATIO	NS				
- 1	256		Inside	e Drawe	er Size	Over-All Unit Size		
Cat. No.	Mfrs. No.	Description	Width	Depth	Height	Width	Depth	Heigh
		2436 Line						
719801	37-T	Plain Cap					273/4"	
719802		5-Drawer Section	375/8"	25"	2"		273/8"	
719803		3-Drawer Section	373/8"	25"	35/8"		273/8"	
719804		Plain Base				40111	277/8"	4"
719805		Low Sanitary Base				4011	27%	5%
719806		High Sanitary Base				40111	271/4"	227/8
719807	37-K	Two Drawers 175/8 x 25 x 33/8" with Tool Tray No. 129 and one Drawer 375/8 x 25 x 2"					273/8"	95
719808	37-M	Two Drawers 175% x 25 x 33%" with Tool Tray No. 129 and three Drawers 375% x 25 x 2"				4011 "	273/8"	147/16
		3042 Line						
719809	32-T	Plain Cap				455/8"	343/4"	13/
719810		5-Drawer Section	423/8"	32"	2"	451/2"	343/8"	147
719811		3-Drawer Section	421/8"	32"	35/8"	451/2"	343/8"	147
719812		Plain Base				451/2"	347/8"	4"
719813		Low Sanitary Base				451/2"	343/8"	53/4
719814		High Sanitary Base				451/2"	343/8"	227/8
719815	32-K	Two Drawers 20 x 32 x 33/8" with Tool Tray No. 124 and one Drawer 423/8 x 32 x 2"						
719816	32-M	Two Drawers 20 x 32 x 33/8" with Tool Tray No. 124 and three Drawers 423/8 x 32 x 2"				45½"	343/8"	14 7/16
	7 4 5	3648 Line	1					
719817	44-T					537"	403/4"	13
719818	500		491/5"	375/8"	21/8"	53 5 "	403/8"	16"
719819		Flush Plain Base				$.153\frac{5}{16}$ "	41"	4
	44-H	Low Sanitary Base				535"	403/8"	534

Locks—locking device to lock all drawers in three to five drawer units extra.

See Price List Inside Back Cover

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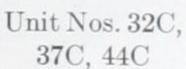




HAMILTON OAK SECTIONAL FILING CASES

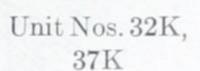


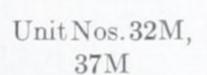
Cap Nos. 32T, 37T, 44T





Unit Nos. 32D, 37D





Flush Base Nos. 32G, 37G, 44G

Sanitary Base Nos. 32H, 37H, 44H

Hamilton Oak Sectional Plan File Cabinets are efficiently and economically serving thousands of drafting rooms. All units of the same line are interchangeable and permit any desired combination. They can be stacked to any reasonable height.

Cabinets are strong and durable. Sides are paneled. Drawers have sturdy mortise and tenon joints as shown in illustration above. They slide on runs on upright walls of cabinet, eliminating rails between drawers. Back of each drawer has a 4-inch hood and divided drawers also have a hood for each compartment.

Material and Finish—Well seasoned, kiln-dried oak, finished in light golden oak is used except for drawer bottoms which are made of welded fibre board for increased strength.

See Page 198 for Dimensions

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HAMILTON OAK SECTIONAL FILING CASES

Showing Drawer Division for Filing Various Size Drawings



All Partitions are sent separately and not installed.

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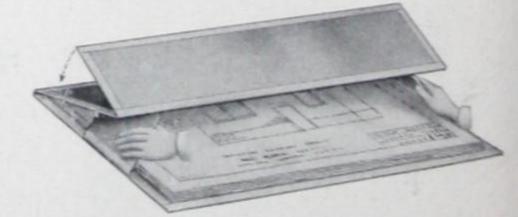
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Style A Drawer, Regular Equipment	
Style B Drawer	
Style C Drawer Extra	
Style D DrawerExtra	
Style E DrawerExtra	
Hold Down Wires, Extra (Not Standard Equipment)	

Tracing Folder

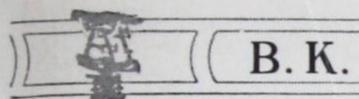
Three or four Hamilton Tracing Folders can be filed in a 2-inch drawer. When ordering, specify catalog number of the unit. Folders are strongly made of .050" thick, three-ply center-core, cover with fiberoid, reinforced with tape and metal eyelets. Folders fit only units of same line number.



CAT. No.	LINE	FOLDER	SIZE RECORD	Width	DEPTH	THICKNESS	Елсн
72001 72002	2436 3042	(1951) (1952)	24 x 36 30 x 42	36¼ 42¾	24½ 31½	1/2	
72003	3648	(1953)	36 x 48	4914	371/4	1/2	

See Price List Inside Back Cover

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STEEL FILING EQUIPMENT

Steel, with its greater strength and better wearing qualities, affords the best protection for your valuable tracings.

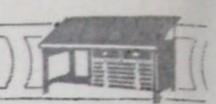
In the Hamilton Steel Line of filing equipment we present steel files of unequalled quality . . . heavy, sturdily built files that guarantee you long and useful service. These files are made of carefully selected furniture steel that has been reannealed and patent levelled to prevent buckling. All corners are welded, making each unit, in effect, a solid, rigid piece of steel.

Hamilton Steel Files are designed for efficiency, too. They have practical features that every man in charge of filing will appreciate. Each drawer in the five-drawer unit, for example, is entirely covered by a pantasote cover to protect the contents from dust and dirt. In addition, this cover holds the tracings in place, preventing them from creeping over the back of the drawer and keeping them flat and free from creases. Units of all kinds are available, all designed to match and interlock with other Hamilton Units of the same size.

The Hamilton Unit Plan File System is of special importance. In this usually called the 'O' line, the Hamilton Shallow Drawer Unit is available. Each drawer of this unit contains a tracing lifter, a device which removes all weight from the tracing you wish to file or remove from the drawer. As a result, every tracing in the drawer is as easy to file as though it were the top sheet. The Hamilton Line also offers a wide range and choice of units for every purpose . . . horizontal filing, vertical filing, or roll filing.

All Hamilton Units are designed in eight standard sizes . . . the 2436 and 24036 for 24" x 36" drawings, the 3042 and 30042 for 30" x 42" drawings, the 3648 and 36048 for 36" x 48" drawings, 42072 for 42" x 72" sheets, and the 25059 for 25" x 59" sheets. With this complete range of sizes, you can solve every filing problem.





GENERAL DESCRIPTION FOR REGULAR LINE

HAMILTON STEEL FILING UNITS

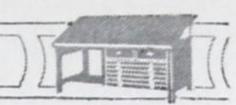
Cat. No.	Mfrs.	Steel Planfile Units	Insid	Drawer e Dime		Unit Outside Dimensions		
	No.		Width	Depth	Height	Width	Depth	Height
		2436 Line				40.13	201/	13
	(1835) (1830) (1831)	Caps for Units	37	26	2	$\begin{array}{c} 40\frac{13}{16} \\ 40\frac{13}{16} \end{array}$	$ \begin{array}{c c} 29\frac{1}{4} \\ 28\frac{1}{2} \end{array} $	15 ³ / ₈
720204	(1837)	3¾" Deep Flush Base	37	26	33/4	$\begin{array}{c} 40\frac{13}{16} \\ 40\frac{13}{16} \end{array}$	$28\frac{1}{2}$ $28\frac{1}{2}$	15 ³ / ₈ 4
720205 720206 720207	(1841) (1839)	6" Sanitary Base Legs for All Units				$40\frac{13}{16} \\ 40\frac{13}{16}$	28½ 28½ 28½	$\begin{array}{c} 12 \\ 22\frac{13}{16} \end{array}$
720208	(1840)	Card File Unit, 5-Drawers, for Cards 3 x 5" or 4 x 6"				40 13	28½	7 11 16
$\frac{720211}{720212}$	(1849) (1855)	3042 Line Cap for Units 5-Drawer Unit 3-Drawer Unit Flush Base 6" Sanitary Base Logs for	43	32	33/4	$46\frac{13}{16} \\ 46\frac{13}{16} \\ 46\frac{13}{16} \\ 46\frac{13}{16} $	36½ 35½ 35½ 35½ 35½	15 ³ / ₈ 15 ³ / ₈ 15 ³ / ₈
720214	(1874) (1861) (1857)	6" Sanitary Base Legs for All Units. Sanitary Base 12" Sanitary Base 23"				$46\frac{13}{16} \\ 46\frac{13}{16}$	35½ 35½ 35½	$\begin{array}{c} 12 \\ 22\frac{13}{16} \end{array}$
720218 720219	(1867) (1868) (1869) (1873) (1874)	3648 Line Cap for Units 5-Drawer Unit 3-Drawer Unit Flush Base 6" Sanitary Base Legs for	50 50	38 38	33/4	and the second second	42½ 41½ 41½ 41½ 41½	

NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

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HAMILTON STEEL FILING UNITS



Cap

Five-Drawer Section

Three-Drawer Section

Deep Drawer Unit

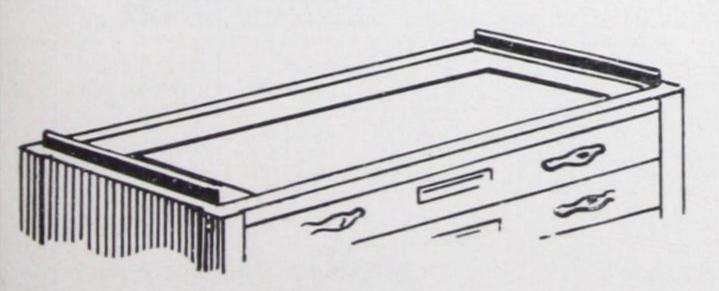
Plain Base

Construction: Hamilton Steel Cabinets are practically everlasting. They outlive the purchaser. Units are all welded of heavy gauge steel. Corner posts are 14 gauge steel, welded to the sides, back, top and bottom frames. These heavy corner posts support the units above without sagging. Drawers cannot bind. Units can be stacked higher and safer. No other unit has such strong corners.

Non-Sagging Drawers: Drawers have 22-gauge bottom, 16 gauge sides, and 16 gauge reinforced top edges on side rails. Cannot sag.

You can push in a Hamilton File Drawer by one corner . . . still it runs true without jamming at the side. The guide runs guide it accurately.

Hamilton Drawers cannot be accidently jerked out, yet can easily be removed for cleaning.



Interlocking: Flanges in the top frame interlock units and prevents shifting when you stack them. There are holes in the unit sides, also, so you can bolt adjacent stacks tightly together.





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HAMILTON STEEL FILING UNITS

Every drawer in Hamilton Units is completely covered with a black coated canvas cover that is fastened to the rear hood and hooked in the front. This cover keeps out dirt and holds tracings flat.

Any 2" drawer can be subdivided as shown at right. They are made by combining No. 1 and No. 2 partitions. All drawers are prepunched so that partitions can be added at any time.

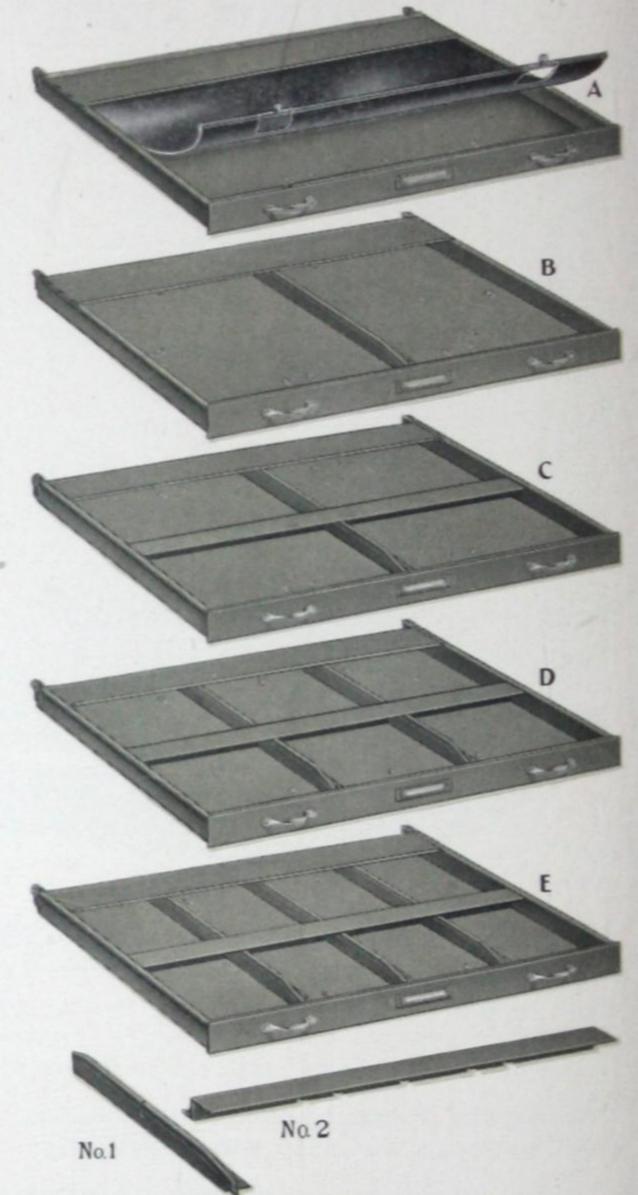
We recommend filing not more than 100 active tracings to a drawer for more convenient handling and less danger of tearing and creasing, but each drawer will hold 250 tracings.

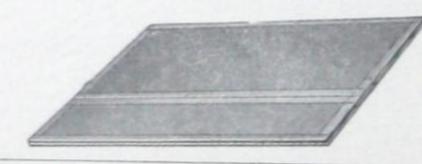
For convenience in handling sets or groups of tracings, we suggest the use of Tracing Folders in the drawers.

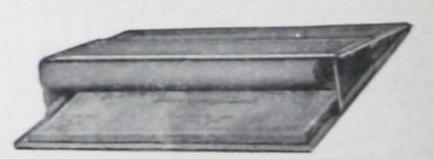
TRACING FOLDERS

Folders are strongly made of .050" thick, three-ply center-core, cover with fiberoid, reinforced with tape and metal eyelets. Folders fit only units of same line number.

At left, below, Hamilton Folder closed. At right, below, open folder with hinged top flap turned back showing how side flaps hold up top.





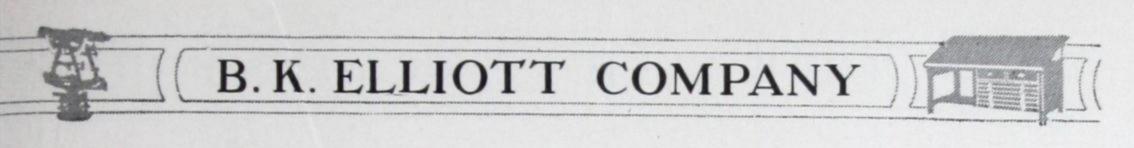


Showing Drawers and Dividers for 2-inch drawers only.

Cat. No.	LINE	FOLDER	SIZE RECORD	WIDTH	DEPTH	THICKNESS	Елсн
72041 72042 72043 72044	2436 3042 3648 Partition N	1951 1952 1953	24x36 30x42 36x48	$ \begin{array}{r} 36\frac{1}{4} \\ 42\frac{3}{8} \\ 49\frac{1}{4} \end{array} $	$24\frac{1}{2}$ $31\frac{1}{2}$ $37\frac{1}{4}$	1/2 1/2 1/2 1/2	

NOTE—Numbers shown in (—) are manufacturers' numbers See Price List Inside Back Cover

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HAMILTON UNIT PLAN FILE SYSTEM

The Hamilton System expresses a new conception of efficiency in Horizontal Sectional Filing Cabinets, Unique Shallow Drawer Units with individual "Tracing Lifters," Label Holders and Pulls, Vertical Filing Cabinets, Roll Tracing Filing Cabinets, Card Files, etc.

Extensive study and thorough analyses of drafting room and filing practice in large and small industries of every description, and in architectural and engineering organizations throughout the world, inspired the ideas and development of the **Hamilton** line. Every detail of the following 9 pages deserves your most careful consideration. Briefly, here are some of the advantages you should not overlook.

The Hamilton System provides for proper classification of active, semi-active, and inactive plans, tracings and data, thus organizing all work in a systematic manner. For instance, the Shallow Drawer Units exhibited on page 206 are designed for active tracings; the 5-Drawer Units on page 209 are for semi-active tracings.

Each drawer of the Shallow Drawer Units is equipped with a unique mechanical Tracing Lifter, described in detail on page 207, a decidedly important feature that saves time, money and tracings, reducing wear and tear on tracings as much as 90%

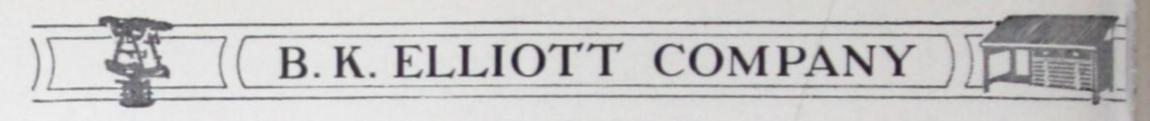
The 5-Drawer Units are equipped with Protectors.

The Vertical Plan Files on pages 210, 212, 213 and 214 represent one of the most useful developments in the **Hamilton** line. Occupying only 18 inches in depth of floor space, this file takes 2600 sheets (up to 6 ft.) and permits easy removal or replacement of any individual plan or sets of plans. The method by which plans are removed and replaced is a remarkable time-saving feature.

Savings in drafting room costs up to 10% have been recorded through installation of the **Hamilton System**; in dollars and cents such savings eventually pay for the equipment many times over!

All units are standardized into three size groups, the "24036 Line", for plans up to 24" x 36", the "30042 Line", for plans up to 30" x 42", and the "36048 Line", for plans up to 36" x 48".

Be sure to order all units from one particular line to be certain of interlocking.



HAMILTON SHALLOW-DRAWER UNITS

FOR ACTIVE TRACINGS

Original engineering drawings must be safeguarded against harm from dirt, dust, rodents, and careless handling. They are far too valuable to risk any damage to them. Hamilton Shallow Drawer Units give your original drawings the protection they deserve and need. Here are some of the exclusive, protective features which no other filing equipment gives you:

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Selecting

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Leplacing

- · Keeps sheets flat. Flat sheets are better preserved and easier to handle.
- Easy to select sheets. Any sheet in the drawer is easily accessible.
- Removes all weight from sheets during filing and refiling. This eliminates tension and strain that so often causes dog-eared and torn tracings. Speeds up filing, too.
- Keeps title blocks lined up and eliminates shifting of sheets because rear hood is adjustable. Can be set for proper depth of drawer to conform to short tracing dimension.
- Makes maximum use of floor space. One 10-drawer unit, only 15%" high, has a capacity of 1,000 sheets. Yet drawers are not overcrowded: there are only 100 sheets to each drawer and every sheet is instantly accessible and readily located.
- Constructed for lifetime service. Shallow Drawer Units are of heavily built, spotwelded construction for rigidity and long life. Drawers operate smoothly and easily.



10-Drawer Shallow-Drawer Units, 3 Sizes

	LINE No.	Outside Dimensions	Drawers Inside	Еасн
72061 (19070)	24036	43 ⁵ / ₁₆ " x 32½" x 15¾"	37½" x 29" x ¾"	
72062 (18094)	30042	49 ⁵ / ₁₆ " x 38 ¹ / ₂ " x 15 ³ / ₈ "	43½" x 35" x ¾"	
72063 (19004)	36048	$55\frac{5}{16}$ " x $44\frac{1}{2}$ " x $15\frac{3}{8}$ "	49½" x 41" x ¾"	

All of the 10-Drawer Units are carried in stock. All have one Pull and two Label Holders.

All of the above units are equipped with Adjustable Hood in back of each drawer.

See Price List Inside Back Cover

NOTE—Numbers shown in (—) are manufacturers' numbers





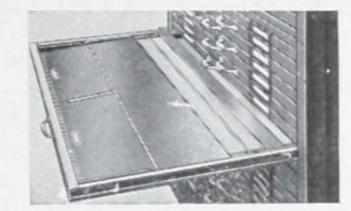
HAMILTON SHALLOW-DRAWER UNITS

HOW TO OPERATE SHALLOW DRAWERS

The Hamilton Shallow Drawer Steel Units are for active tracings . . . current tracings that you use frequently. Such tracings usually get the most wear and tear. In a Hamilton Shallow Drawer Unit, however, the strain and tension that is the most common cause of damage is largely eliminated. This is accomplished by the patented Tracing Lifter shown below.

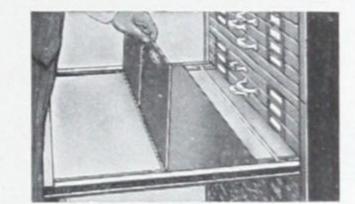
Lifter Acts as Compressor

This shows the compressor lying flat, holding the sheets down, and preventing crumpling, curling, or tearing.



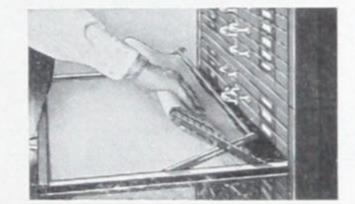
Turning Back the Front of Lifter

The front half of lifter is lifted up, and the desired tracing is then located. Note that the rear half of lifter is still holding the sheets down.



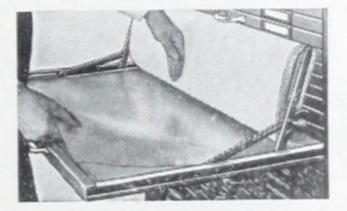
Selecting Sheet Desired

The sheet shown flat on top is the one desired. Those above it have been turned over the lifter, which is then turned back, removing all pressure from tracing wanted.



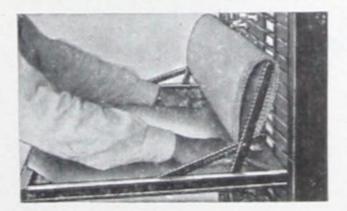
Removing Sheet Desired

The tracing desired is now the top sheet, and may be removed easily as shown in the illustration, without any strain on the sheet.

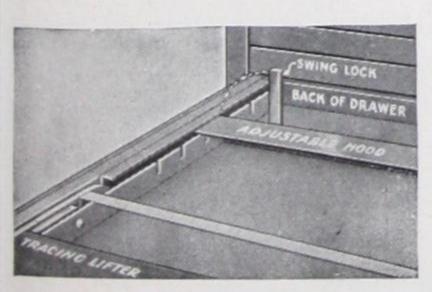


Replacing Sheet

The tracing is now being replaced in its original position. No wrinkling, crumpling, buckling, or cracking.



ADJUSTABLE REAR HOOD



Every drawer in the Hamilton Shallow Drawer Unit is equipped with an adjustable rear hood. This hood slides over the slotted drawer sides as shown, is set at the desired depth and the swing lock bar is dropped into the slot to hold the hood securely. The drawer thus is adjustable, front to back, to tracing sizes. Also the sheets cannot curl or creep over the back of the drawer.





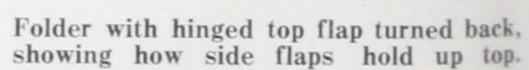
7891 (1908 7892 (1804 7893 (1806

Unit 72

HAMILTON STEEL FILING UNITS



Fig. 1 — Showing Drawers and Dividers



	EACH	
72081	Drawer Divider No. 1	
72082	Drawer Divider No. 2.	
72083	Folders for 24036 Line Drawers	
72084	Folders for 30042 Line Drawers	
72085	Folders for 36048 Line Drawers	

See Price List Inside Back Cover

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HAMILTON STEEL UNITS

FIVE DRAWER UNITS FOR SEMI-ACTIVE TRACINGS

Every drawer in Hamilton 5-Drawer Units is completely covered with a black pated canvas cover that is fastened to the rear hood and hooked to the front. This over keeps out dirt and holds tracings flat.

Rollers at the front and rear make each drawer run smoothly and easily. Because f the safety stop, the drawers cannot be withdrawn accidentally; but they may be

asily removed if desired.

We recommend filing not more than 100 tracings to a drawer for more convenient andling and less danger of tearing and creasing, but each drawer will hold 250 tracings.

For convenience in handling sets and groups of tracings, we suggest the use of

racing Folders in the drawers (see page 208).

Any of the divided drawer arrangements shown can be used for smaller sized racings. They are made by combining No. 1 and No. 2 partitions. The drawers are re-punched so that partitions may be added at any time.



GENERAL INFORMATION

		OUTSI	DE DIME	NSIONS	DR.	WERS IN	SIDE	
	LINE No.	WIDTH	DEPTH	HEIGHT	Width	DEPTH	HEIGHT	Еасн
2091 (19085)	24036	43 5 "	32 1/2"	153/8"	39 ½"	29"	2"	
2092 (18048)	30042	49 5 "	381/2"	15%"	45 1/2"	35"	2"	
2093 (18068)	36048	55 5 16	44 1/2"	153/8"	51 1/2"	41"	2"	

CARD FILE UNITS

(For 4 x 6" or 3 x 5" cards)



Unit 72094 has 5 drawers and 72095 has six drawers as shown above. Drawers will take 4 x 6" or 3 x 5"

When used for 3 x 5" cards, filler strips furnished with all units are left in place. When used for 4 x 6"

ards, the filler strips are removed.

The use of the card file unit, in connection with the plan file unit, promotes efficiency and time saving. rawers in the 24036 line unit have 24 inches of filing capacity, a total of 120 inches for the five drawers. he drawers in the 30042 line unit have 29 inches of filing capacity, a total of 174 inches for the six drawers

OUTSIDE DIMENSIONS

HEIGHT LINE NO. DEPTH EACH WIDTH 43 5 " 24036 381/2" 2095 (18058)..... 49 5 " 30042

NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

Marie Page 209 more







HAMILTON VERTICAL PLAN FILE UNIT

Hamilton Vertical Plan File 72101 for 9 x 12 tracings has a capacity of 3,000 sheets per drawer or a total capacity of 9,000

21101 (19

121104 (19

71105 (18

721106 (18

721107 (1)

21108 (1

721109 (1

21110 (1

sheets for the three drawers—the 72102 File has a capacity of 6,000 12 x 18 tracings. The above capacities are figured for extremely active tracings. If files are used for storage of inactive or dead tracings, the capacities will be 50% to 100% greater.

All drawers in the two units shown have 24 inches of clear filing space. Each drawer is divided into ten separate compartments. Six folders are furnished for each compartment, making a total of sixty folders per drawer. Fifty tracings should be filed in each folder. Extra folders can be purchased for greater capacity.

Compression springs are provided in each compartment for compressing and holding tracings in an upright position. To remove or replace tracings, lift folder till free of

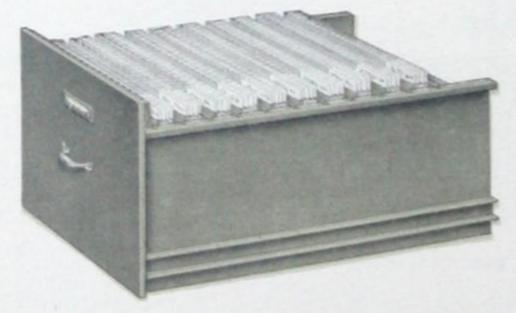
compression, then page through like a book, withdraw from, or insert tracing in proper location. Close folder and return to file.

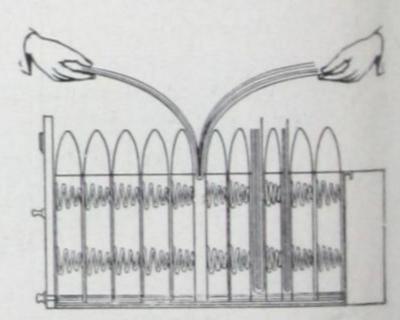
All units are finished in Olive Green Baked Enamel. All drawers have progressive suspension roller bearing mechanism for easy operation.



SPECIFICATIONS

LINE	Outs	IDE DIME	NSIONS	SIZE OF RECORD	
No. 72101 (19040) 24036 3 Drawer 72102 (19041) 24036 2 Drawer	$43\frac{5}{16}''$	321/2"		To BE FILED 9" x 12" 12" x 18"	Елсн



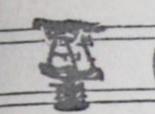


Above is shown a typical Hamilton vertical file drawer—Spring compressors are an integral part of vertical plan file drawers. A steel partition separates each group of two compressors, forming two pockets between separators. Ten pockets to the drawers, each equipped with six tracing folders.

Beside this illustration is a diagram of the spring suspension method, showing a folder pulled out and opened.

NOTE-Numbers shown in (-) are manufacturers' numbers

See Price List Inside Back Cover



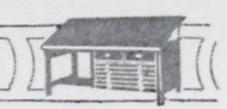
21101 (19083)

21102 (18053) 21103 (18067)

21104 (19095)

21105 (18055) **21106** (18073)

B. K. ELLIOTT COMPANY



HAMILTON STEEL UNITS

CAP AND BASES



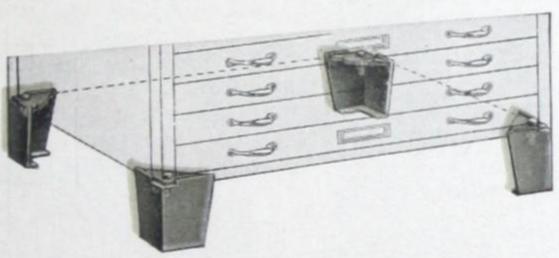
Cap Unit

	Ou	TSIDE DIMENS	SIONS	
LINE No.	WIDTH	DEPTH	Неіднт	Еасн
24036	$43\frac{5}{16}''$	331/4"	13"	
30042	$49\frac{5}{16}''$	391/4"	13"	
36048	$55\frac{5}{16}''$	451/4"	13"	



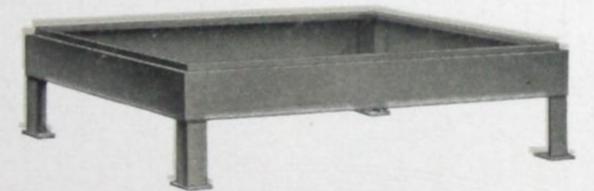
4-Inch Flush Base Unit

LINE No.	WIDTH	Dертн	Неіднт	Еасн
24036	$43\frac{5}{16}''$	321/2"	4"	
30042	$49\frac{5}{16}''$	381/2"	4"	
36048	55 5 "	441/9"	4"	



6-Inch Sanitary Base Legs

21107 (18074)	Set of 4 legs	SET
	Adaptable to any of the Units regardless of the size.	



High Sanitary Base

	LINE No.	WIDTH	DEPTH	HEIGHT	Еасн
21108 (19097) 21109 (18061) 21110 (19012)	24036 30042 36048	$43\frac{5}{16}''$ $49\frac{5}{16}''$ $55\frac{5}{16}''$	$32\frac{1}{2}''$ $38\frac{1}{2}''$ $44\frac{1}{2}''$	12" 12" 12"	

NOTE-Numbers shown in (-) are manufacturers' numbers

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HAMILTON STEEL VERTICAL U-TRACING FILE

GRAY ENAMEL FINISH



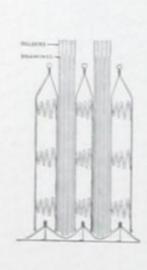
Double-Wall Insulated Construction for Better Fire-Resisting Qualities

It is easy for you to locate drawings in this improved vertical file. Just raise the top cover and 3,000 tracings are available, indexed on cards fastened to the inside of the top. Each of the 60 folders is also indexed. Whether you have three or three thousand drawings in your file, the folders are always held tightly upright by pressure from 15 full height compressor dividers. This pressure is evenly distributed over the whole folder, not just at top or bottom. The compressor dividers are "free-floating" and have rollers at the top so that they slide back and forth easily. These rollers are not exposed, they are covered by a sloping steel channel.

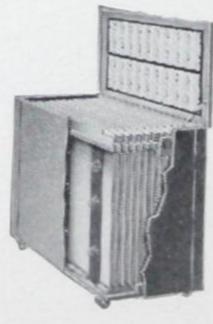
The bottom of the compressors are connected with flexible fabric. Protection for your drawings is assured by the double-wall construction of the file. The inner wall or shell is insulated from the heavy welded outer shell with thick, solid fire-felt. The snug-fitting top is insulated double-wall construction also. The top stays up when desired. It has a continuous full-length hinge for strength. 60 tough Paperoid folders, lock for cover, and steel wheel casters are included with file.

	NUMBER	Size	NUMBER		Outsii	E SIZE	
72121 (406) Full Size 72122 (407) Full Size 72123 (408) Full Size	15 15	44 x 341/"	60	WIDE INCHES 42 48 54	Нісн	Deep	Елсн

These Features Help You File Efficiently



This cross section view shows how folders are held upright by the compressor springs and partitions. Note the continuous strip of fabric at bottom so folders cannot slide down.



The way in which the compressor springs operate to hold folders upright is also shown in this sectional view. All folders and drawings are held firmly in place by strong springs.



Hold a piece of paper between the palms of your hands . . . gently but firmly. The compressor springs holding the folders upright are equivalent to nine such pairs of hands.

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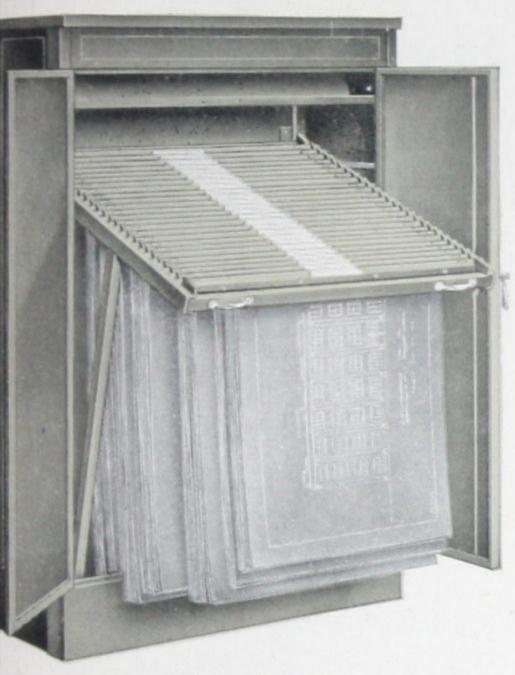
Note—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

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HAMILTON STEEL VERTICAL PLAN FILE

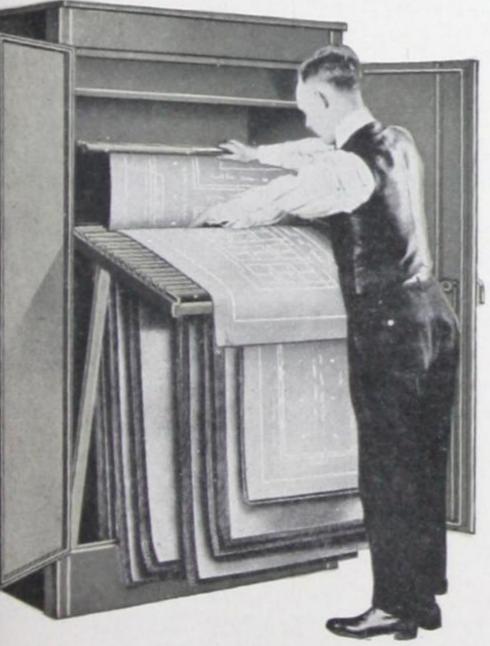


File Rack Open

The Hamilton Vertical Plan File will take any ze sheets or plans up to the maximum size listed page 214.

Compact: The Hamilton Vertical Plan File kes only 18 inches in depth of floor space.

The rack is closed by pushing downward on the



Replacing Plans

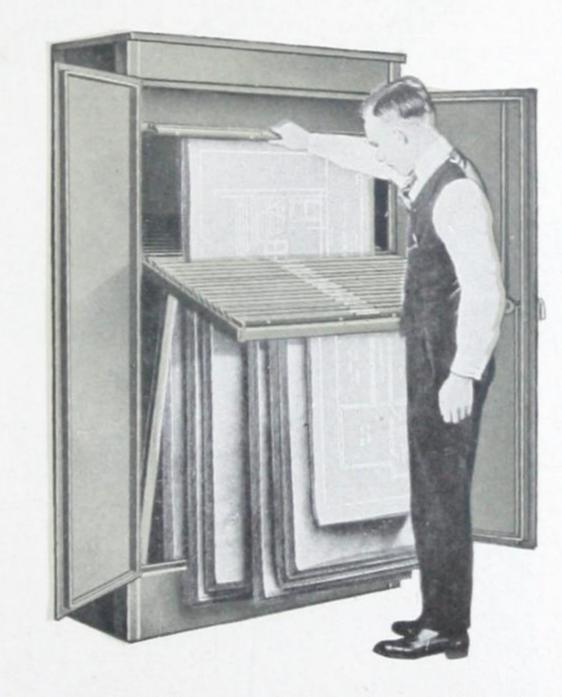
The Vertical Plan File is designed to efficiently handle reference plans, maps, charts, etc. Here is a file that has a place in every office and fills a most important gap in filing of large sheets. A space saver requiring but a small amount of floor space.

The cut to the left shows the file rack pulled out for removal of binders, which hold the plans. There are 26 binders and each binder will hold 100 sheets.

It is unnecessary to punch holes in plans. The binder clamps and holds securely at all times without danger of slipping. The sheets or sets of plans are easily removed or placed in the binders.

Easy Reference: When a set or group of plans are wanted for reference, the correct binder is located by indication on label holder, and lifted from the rack as shown below.

The illustration on this page shows the manner of replacing sets on the rack. As each binder has a label holder, it is easy to locate the plans desired.



lower end, which moves back and upward into the cabinet. It then stands nearly vertical.

Capacity: This file has a capacity of 2600 sheets. The shelf above can be used for storage of paper, tracing cloth, etc. All Hamilton files will take plans from 36 to 70 inches in length. The short sets should be filed toward the front of the rack and the long sets to the rear.

Material and Finish: Made of finest quality furniture steel, finished gray, baked enamel.

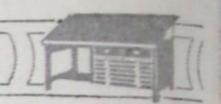
Style of Racks: The rack holding the binders is made in three styles, namely: Plain, Style A, and Style B. (See Page 214) However, all Vertical Files are equipped with the plain rack which holds 26 binders—the maximum size each cabinet will accommodate. Style A and B Racks are subdivided, and will be supplied in place of the plain rack when so ordered.

Specifications on page 214.

See Price List Inside Back Cover

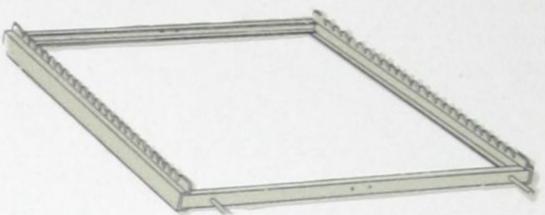
Some Page 213 Joseph



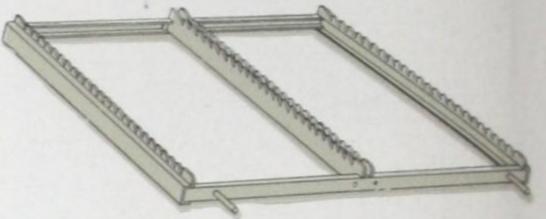


HAMILTON VERTICAL PLAN FILE

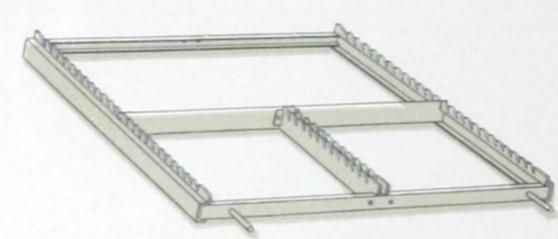
(Continued)



Plain Rack



Style A Rack



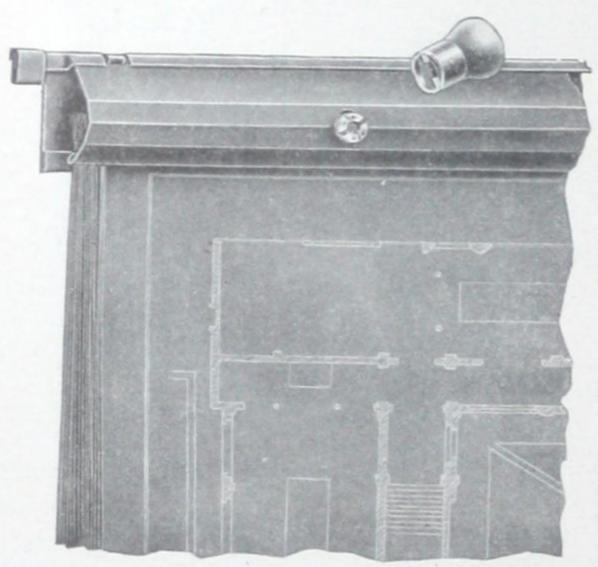
Style B Rack

The Subdivided Racks: The rack can be divided as shown in cut of Style A and B rack.

The plain rack is supplied in all cabinets except when otherwise ordered, and holds 26 full-size binders.

The style A rack is supplied for halfsize binders and will take 52 binders.

The style B rack will take 13 fullsize binders at the rear and 24 half-size binders at the front.



The Binder: The cut at the left shows a detail of the Sheet Binder. The key shown fits the screws with which the binders are tightened. It is made so that it will not slip easily off of the screw head. The jaws of the binder spring apart as the screws are loosened to permit insertion.

Locking Up Binders

When contents are placed in binders, screws should be turned by hand until reasonably tight, then tighten screws one turn with key.

Old prints or tracings that are badly worn should be protected by a folder shaped like an inverted U of heavy wrapping paper or oil cloth.

		MAXIMUM FILING SIZE	OF	OF FULL WIDTH		FLOOR SPACE REQUIRED	SHIPPING WEIGHT	Елсн
72141	(1877)	36"x70"	Plain	26		18x443/4x72	550 lbs.	
72142	(1877A)	17"x70"	Style A		52	18x443/4x72		
72143	(1877B)	36"x70"	Style B	13	24	18x443/4x72		
72144	(1879)	48"x70"	Plain	26		18x563/4x72		
72145	(1879A)	23"x70"	Style A		52	18x563/4x72		
72146	(1879B)	48"x70"	Style B	13	24	18x56 ³ / ₄ x72		

NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

PAGE 214 Johnson

Adaptable attached. Helps to square slight Can also

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72151 Cou

72152 "T

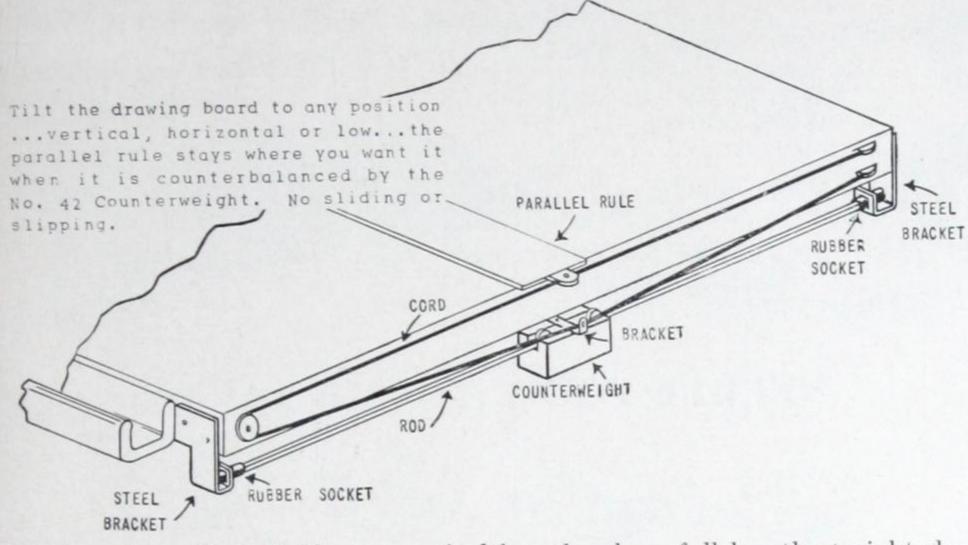
board, elim

A resil boards or to any size bo

72154 "



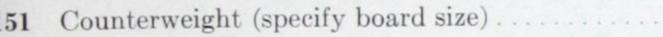
COUNTERWEIGHT FOR RULING ATTACHMENT

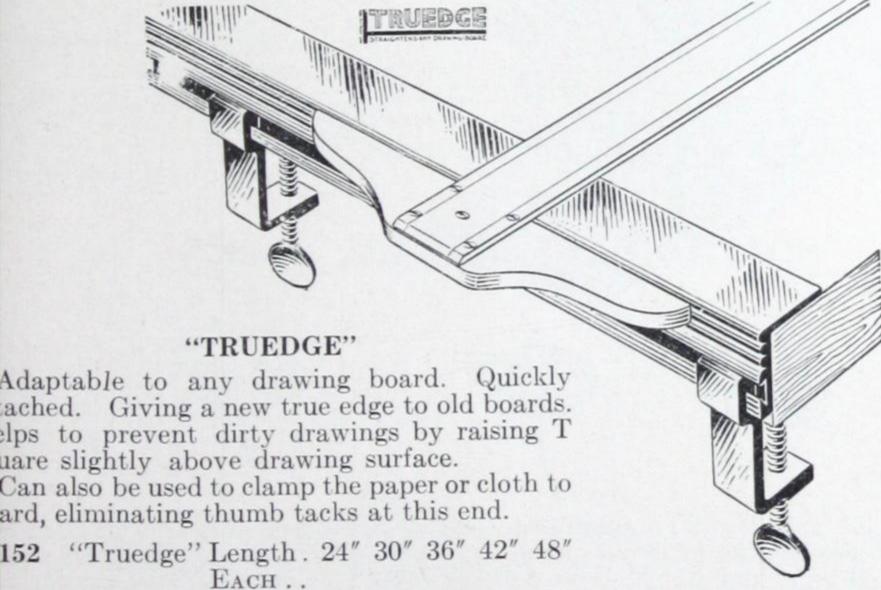


Used on Auto-Shift Tables or vertical boards where full length straightedges are d with Parallel Ruling Attachments.

A Roller-bearing weight is mounted on a metal rod that always stays true.

EACH





"NO-INK" DRAFTING BOARD TOPS

A resilient Composition, 1/8" thick, to be glued to the top surface of old drawing ards or tables. Increases density of lines on pencil drawings. Can be furnished for y size board.

153 "No-Ink" Tops

36 x 48" 36 x 60" 36 x 72" 30 x 42" SIZE:

EACH:

"No-Ink" Top Glue

GALLON PINT QUART ½ PT. SIZE:

EACH:

See Price List Inside Back Cover

mono Page 215 mono





STAMPED STEEL THUMB TACKS





These Stamped Steel Tacks are made of one piece of tough, hard steel (especially made for this purpose) and are of the very best quality. They have needle finished points, so that they make an excellent substitute for the regular thumb tacks, when it is desired to have a lower priced article.

PER BOX OF 100

- 72161 Stamped Steel Thumb Tacks, flat heads, 3/8 inch diameter....
- 72162 Stamped Steel Thumb Tacks, flat heads, ½ inch diameter

NEEDLE POINT THUMB TACKS









These tacks are of one piece tempered steel. The long sharp "Needle Point" penetrates any wood easily and will not mar.

They are put up 50 tacks to a box.

PER BOX

72172 B

Estaples

Combinat

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merds ar

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曲光"

72174 B

12175 H

72163 Needle Point Thumb Tacks, ¾ inch diameter.

72164 Needle Point Thumb Tacks, ¼ inch diameter.

72165 Needle Point Thumb Tacks, ½ inch diameter.

72166 Needle Point Thumb Tacks, ∮ inch diameter.

SOLID STEEL THUMB TACKS







These Solid Steel Head Thumb Tacks have a very thin and strong head, so constructed as to prevent the pin from pulling out or pushing through. They are neat in appearance and very durable.

Per Box

of 100

72167 Solid steel, round heads, ¾ inch diameter.

72168 Solid steel, round heads, ¼ inch diameter.

72169 Solid steel, round heads, ¼ inch diameter.



TWISTOUT-TACKS

PER BOX

721610 Twistout Thumb Tacks, 12 to Box.....

See Price List Inside Back Cover

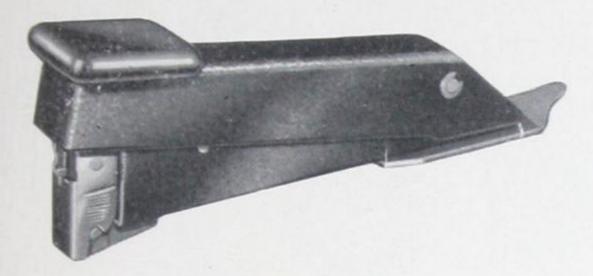
mono Page 216 Johnson





BOSTITCH TACKER

The best Tacker for fastening paper and cloth to drawing boards. Simple and easy o operate . . . free from jams. Taks 210 staples with 1/4" legs.





2171 Bostitch Tacker.....

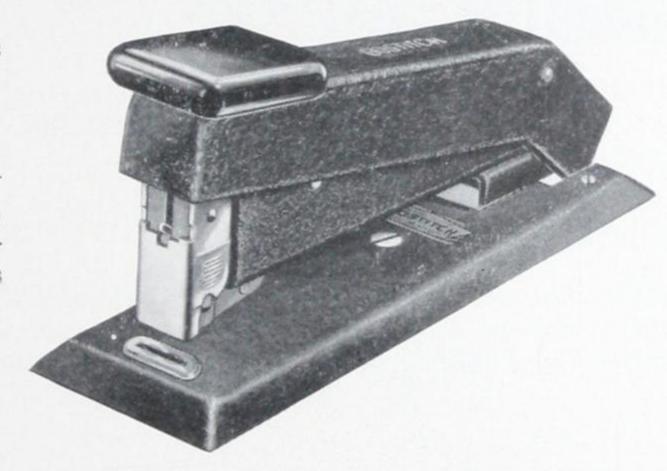
EACH

2172 Bostitch Staples, 5000 to box.....

STAPLING MACHINES

t Staples . . . It Pins . . . It Tacks

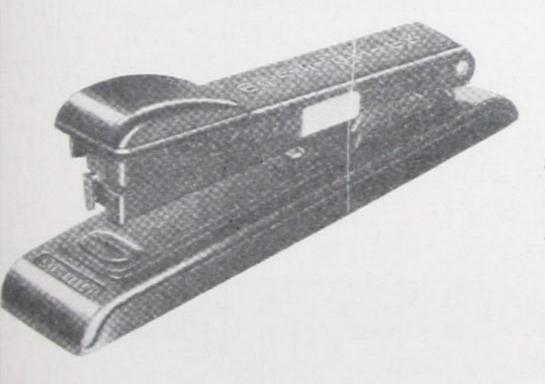
Combination Stapler and Tack-For stapling blueprints, ecords and office papers. Subtantially built, using staples with 1/4" legs.



EACH

Bostitch Stapler.....

Bostitch Staples, 5,000 to box.....



A smaller size combination Stapler and Tacker small enough to carry in vest pocket, yet strong enough for any stapling job.

EACH

Bostitch Stapler.....

Bostitch Staples, 5,000 to box.....

See Price List Inside Back Cover

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BE'I

72193

1234

72195

72196

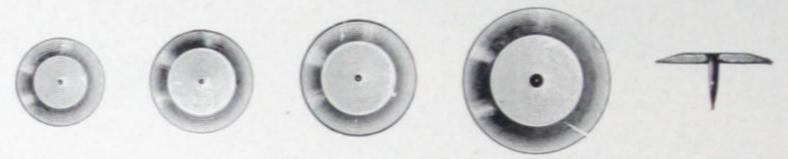
72197

PER DOZ

BRASS THUMB TACKS

STEEL POINTS SWAGED-ONE DOZEN ON A BLOCK

A hand-made Thumb Tack. Made of brass with beveled heads, with steel point swaged into head . . . cannot loosen or push back through head.



Beveled Heads

		Per Gross	PER Doz.
72181	3/8 inch diameter		
72182	7 inch diameter		
	½ inch diameter		
	5/8 inch diameter		

ALTENEDER'S GERMAN SILVER THUMB TACKS

These Thumb Tacks are thoroughly well made. The steel pins are of proper length and thickness and are screwed into the heads and warranted not to come out. Packed one dozen on a block.

	IER DUL.
72185	German silver, beveled heads, 3/8 inch diameter
72186	German silver, beveled heads, ½ inch diameter
72187	German silver, beveled heads, 5/8 inch diameter

THUMB TACK LIFTERS



72188 Steel, nickel-plated, with flange, holding tacks secure.....

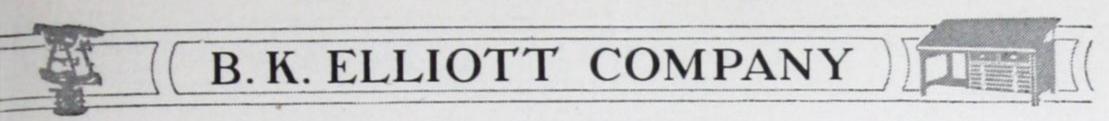
LEAD PENCIL FILE



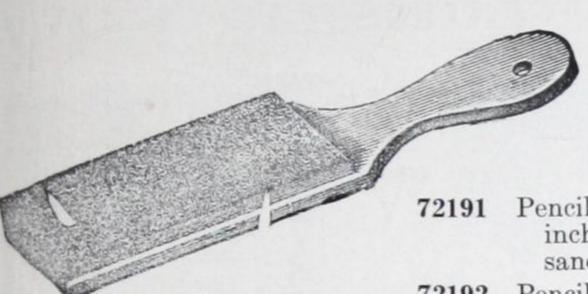
72189 Lead Pencil File and Tack Lifter, 6 inches.....

See Price List Inside Back Cover

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PENCIL POINTERS



These pencil pointers consist of sheets of flint paper made into a block.

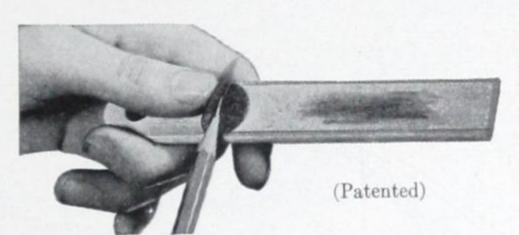
EACH PER DOZEN

Pencil Pointer, 11/4 x 6 inches, with handle,

72192 Pencil Pointer, 11/4 x 6 inches, with handle, emery paper

REFILLABLE PENCIL POINTERS

A Pencil Pointer and felt Point Wiper in a single renewable unit. Each abrasive refill has a felt point wiper attached to remove surplus graphite from the pencil point. They are both replaced by merely sliding a new refill on the holder. The polished wood holder is 6" x 1" and furnished with one extra refill.



Doz.

72194 Pencil Pointer Refills (10 to envelope).....

GITS KNIFE



A handy knife to have around. Convenient to use. Opens with one hand. Press the button on the handle and the blade slides out, and locks automatically in any one of four different exposed lengths. Use as an eraser and pencil sharpener. Replaceable stainless steel blade.

EACH

72195 Gits Knife. .

STEEL ERASERS



EACH

72196 Steel Eraser, with long blade, coco handle, Domestic.....



EACH

Steel Eraser, with short blade, coco handle, Domestic.....

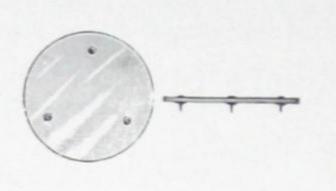
See Price Lsit Inside Back Cover

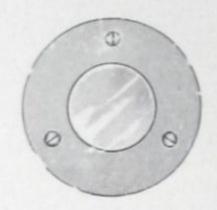
mono Page 219 Johnson





HORN CENTERS



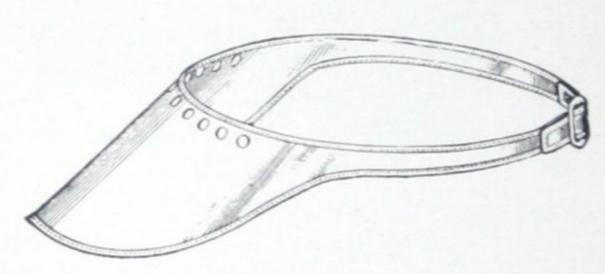






	EAC	H
72201	Horn Center, plain, ½ inch diameter	
	Horn Center, with German silver rim, 3/4 inch diameter	
72203	Center Tack, Nickel Silver, Steel Point	

EYE SHADES



transparent.....

PAPER WEIGHTS





See Price List Inside Back Cover

PAPER I

12101 Paper Let 12102 Wash

12103 No. (

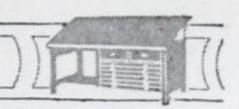
12105 No. 1

EACH

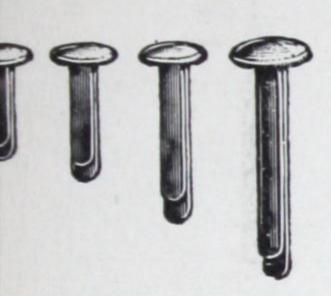
122106 Gem 122107 Gem

722108 Offi

722109 Ar 722110 Ar



PER FASTENERS



101

102

103

105



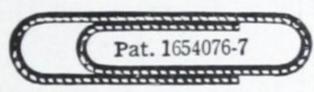
PER BOX

	Paper Fasteners, round heads (100 to box)	1	2	3	4
	Length of shanks, inches	1/4	1/2	3/4	1
)	Washers 100 to box.				

PER BOX

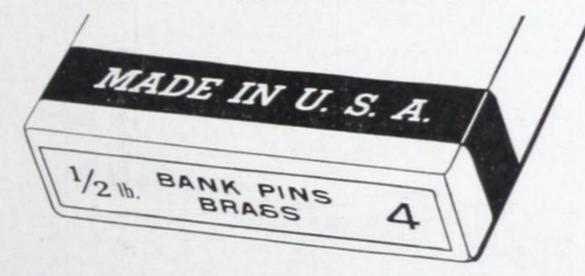
No. 0B, O. K. Paper Fasteners,	100 in a box
No. 1B, O. K. Paper Fasteners,	100 in a box
No. 2B, O. K. Paper Fasteners,	100 in a box





PER BOX

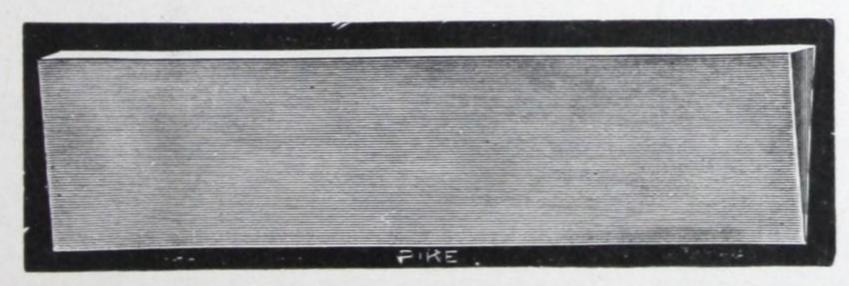
OFFICE PINS



PER BOX

108 Office Pins, ½ lb. box.....

ARKANSAS OIL STONES



EACH

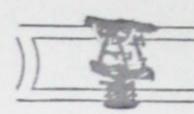
Arkansas Oil Stone, wedge shape slip, 3 to 41/2 inches long, 3/4 to 1 inch 2109

Each....

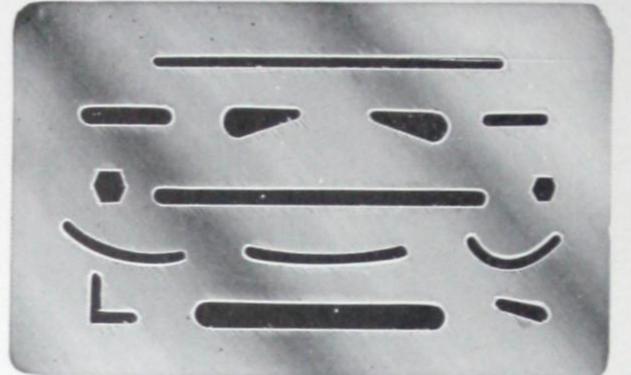
2110

See Price List Inside Back Cover

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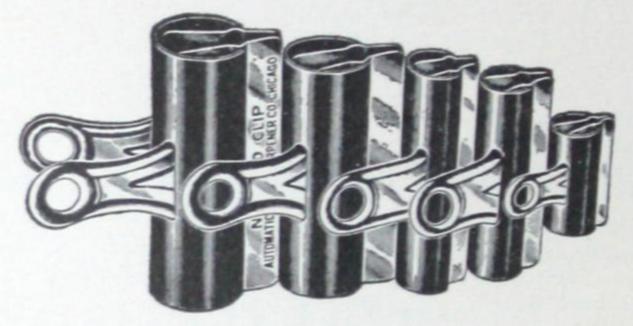


ERASING SHIELDS

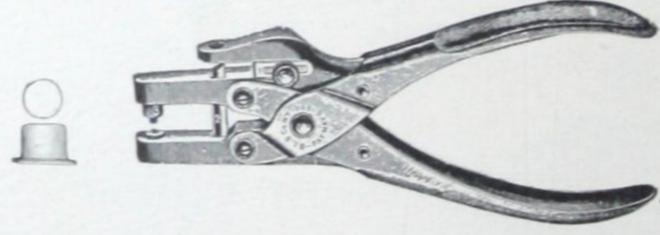
Doz. EACH

72221 Steel Erasing Shield (Allegheny Steel)

STEEL SPRING CLIPS



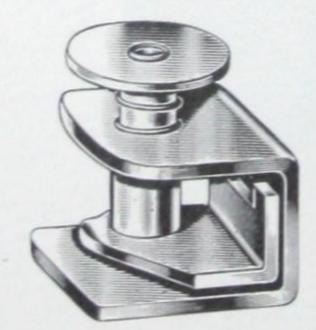
EYELET PRESS AND PUNCH



72223 "Triumph" Eyelet Press and Punch...

72224 Eyelets, 250 to box...

72225 Gummed Reinforcements, ¼" hole, 100 to box...



PRESTO PAPER PUNCH

A Handy, Practical Punch for Students and Engineers

Sturdily constructed, Presto will last indefinitely, as there is nothing to get out of order. Punches a standard 1/4 inch hole placed automatically 1/4 inch from edge of paper. Cuts a neat, uniform hole and saves time. Easy to operate.

72226 Presto Paper Punch.....

See Price List Inside Back Cover

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Draftsi racing clot Its use irence of ti

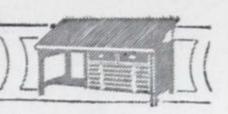
It is questioned over a modern to the second over a modern

72231 10-1 72232 60-

12233 So 12234 So

72235 So 72236 So

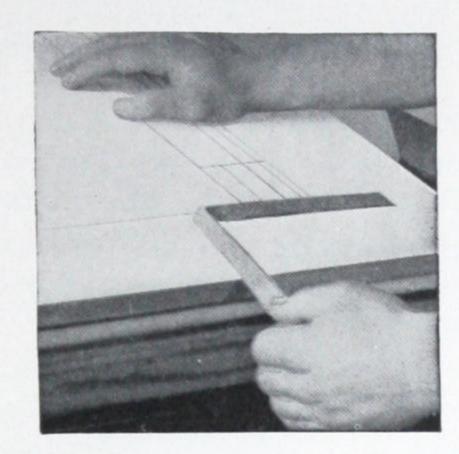




SCOTCH DRAFTING TAPE

(REQUIRES NO MOISTENING)



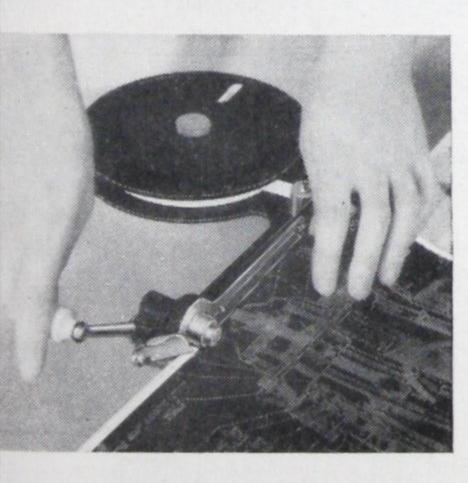


Draftsmen will welcome Scotch Drafting Tape as the most efficient means of holding cing cloth or paper to the drawing board because—

Its use permits sliding T squares and triangles over the drawing without interence of thumb tacks, and prevents tearing of paper and edge curling.

It is quickly and easily removed and will not leave a stain or residue. It can be ed over and over again on drawing paper, tracing cloth and vellum, and when the is finished, and the tape is removed, the surface is left clean and free as before the be was applied.

SCOTCH EDGING MACHINES



A new, fast, economical way to apply protective edges to valuable Tracings, Drawings, Maps, Plats and Quartersections, City, County, and State records, etc.

The new Scotch Edger is a very efficient low-priced unit for applying Scotch Cellulose Edging Tape made especially for this purpose.

Scotch Edging Tape seals without water or heat, will not buckle, curl or shrink, and is not affected by the heat in printing machines.

See Price List Inside Back Cover

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SCOTCH CELLULOSE TAPE

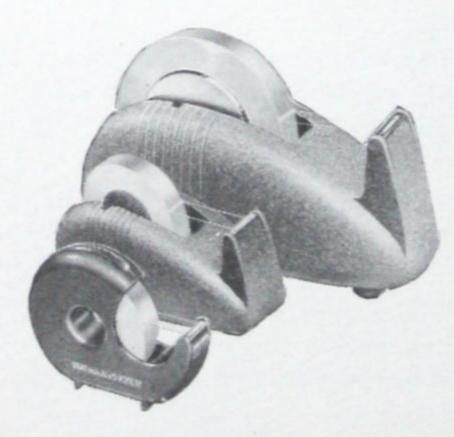
(TRANSPARENT)

Requires no moistening. Fully transparent. Seals instantly with light pressure. Excellent for mending torn tracings, prints, maps, etc., or holding copy to bulletin board, window posters or sealing packages.



	LACH
722401	Scotch Cellulose Tape, ½" wide, 72 yds. long, on 3" core
722402	Scotch Cellulose Tape, 3/4" wide, 72 yds. long, on 3" core
722403	Scotch Cellulose Tape, 1" wide, 72 yds. long, on 3" core
722404	Scotch Cellulose Tape, ½" wide, 36 yds. long, on 1" core
722405	Scotch Cellulose Tape, 3/4" wide, 36 yds. long, on 1" core
722406	Scotch Cellulose Tape, ½" wide, 22 yds. long, on 1" core
	Scotch Cellulose Tape, 3/4" wide, 22 yds. long, on 1" core

HANDY REFILLABLE DISPENSERS FOR USE WITH CELLULOSE TAPES



Made in three sizes to accommodate any size roll of tape listed above. The heavy duty size will take any of the 72-yard rolls and has rubber cushion feet.

The Desk Type is refillable with 36 or 22-yard rolls, has felt-covered base.

The Hand Dispenser is brown plastic and will hold either 36 or 22-yard rolls.

722408	Heavy Duty Dispenser	EACH
722409	Desk Dispenser	
722410	Hand Dispenser	

Write for Quantity Discounts

See Price List Inside Back Cover

Some Page 224 Johnson

1251 Castel stan

252 Winne poli

72253 Koh-i

12254 Eldor

12255 Turq

31

72256 V.

of Van



PENCILS

CASTELL

A.W. FABER € "CASTELL" F * HB

PER GROSS PER DOZ.

Castell Drawing Pencils, hexagon, green polish, gold stamped. In 17 degrees as follows: 6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H, 7H, 8H and 9H. In metal box containing one dozen pencils......

PER GROSS PER DOZ.

Winner Drawing Pencils, (A. W. Faber) hexagon, green polish, gold stamped. In 17 degrees from 6B to 9H . .

KOH-I-NOOR



PER GROSS PER DOZ.

Koh-i-noor Drawing Pencils, hexagon, yellow polish, gold stamped. In 17 degrees as follows: 6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H, 7H, 8H and 9H...

ELDORADO

DIXON'S TYPHONITE ELDORADO" HIB

PER GROSS PER DOZ.

Eldorado Drawing Pencils, hexagon, yellow polish, gold stamped. In 17 degrees as follows: 6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H, 7H, 8H and 9H.

TURQUOISE

IN EAGLE "Chemi-Sealed" TURQUOISE 327 2H

PER GROSS PER DOZ.

Turquoise Drawing Pencils, hexagon, turquoise polish, gold stamped. In 17 degrees as follows: 6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H, 7H, 8H and 9H.

VAN DYKE



PER GROSS PER DOZ.

Van Dyke Drawing Pencils, hexagon, yellow polish, gold stamped. In 17 degrees as follows: 6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H, 7H, 8H and 9H

See Price List Inside Back Cover

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PENCILS VENUS

AMERICAN PENCIL CO. NEWYORK - VENUS - DRAWING - H

PER GROSS PER DOZ.

Venus Drawing Pencils, hexagon, dark green polish, variegated, gold stamped. In 17 degrees as follows: 6B, 5B, 4B, 3B, 2B, B, HB, F, H, 2H, 3H, 4H, 5H, 6H, 7H, 8H and 9H.

ELECTRIC

HH "ELECTRIC" B.K. ELLIOTT CO.

PER GROSS PER DOZ.

RUBBER TIPPED PENCILS
For Field and Office Use
TICONDEROGA

MADE IN DIXON TICONDEROGA 1386 Nº 2



PER GROSS PER DOZ.

72263 Ticonderoga Pencils, hexagon, yellow finish, red eraser.
In 5 degrees as follows: No. 1 very soft, No. 2 soft,
No. 2 5/10 firm, No. 3 medium, No. 4 hard.......

COPYING PENCILS

W. FABER COPYING INK * 9609 *

PER GROSS PER Doz.

Nº 73½ "Mephisto." COPYING. * L&C. HARDTMUTH, SCOVAKIA.

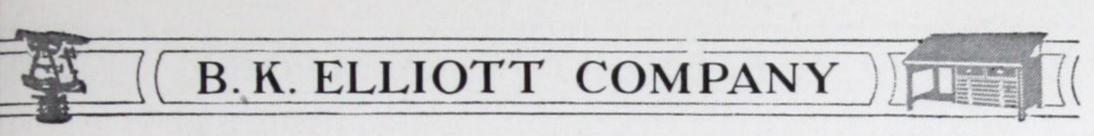
PER GROSS PER DOZ.

72269 Mephisto Copying Ink Pencils, No. 73B, violet, round...

See Price List Inside Back Cover

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DR



ALTENEDER DRAFTSMAN'S AND ARTISTS'S PENCIL

While this pencil is designed primarily for the draftsman and artist, the long, sturdy lead afforded, and the ease with which it is gripped, make it an ideal pencil for writing.

Construction

Barrel: It is made of Snake-wood with natural finish. The lead chamber extends the entire length, permitting the use of standard leads five inches in length.

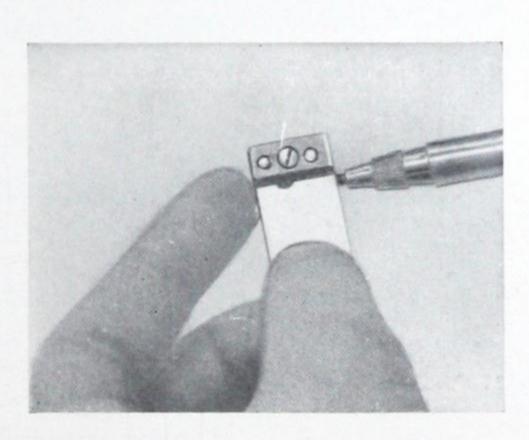
Chuck: This part is made of steel, hardened and tempered. Three jaws provide straight clamping surface, preventing breakage of leads.

Clamp: The clamp is knurled to provide a grip when clamping or releasing leads. It is made of stainless steel.

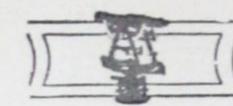
GRIP: This part is grooved in two directions, affording a firm, easy grip and preventing the pencil from turning while in use. It is made of stainless steel.

Eraser Ferrule: The ferrule is made of stainless steel. Pencils are also furnished with colored composition caps in place of the eraser ferrule.

The lead repointer provides a conical point in a few seconds. Repointer blades are interchangeable and can conveniently be replaced when dull.



		EACH
72271	Single Pointed Pencil with detachable pocket clip	
72272	Double Pointed Pencil furnished with an Alteneder Needle Point in one end	
72273	Single Pointed Pencil with colored composition cap and detachable pocket clip. (White, black, red, blue, or green.)	
72274	Extra clamps	
72275	Alteneder's Lead Repointer	
72276	Replacement Knives for Repointer	
		Doz.
72277	Erasers	
	See Price List Inside Back Cover	
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DRAFTSMAN'S AND ARTIST'S PENCIL

CASTELL LOCKTITE



Castell Locktite Pencils have an exclusive self-locking clutch which holds the lead without slipping. The collet supports the lead all the way around, thus preventing breakage. Merely press the button to release and adjust the lead. Made of rich green-colored plastic, each pencil is marked in degrees from B to 9H.

EACH DOZEN

72281 Locktite Pencils....

COLORED LOCKTITE PENCILS

Same construction as No. 72281 except barrels are colored to correspond with colored lead used. Winner colored leads are same length and diameter as black refill leads.

72282 Red Locktite Pencils.
72283 Blue Locktite Pencils.
72284 Green Locktite Pencils.
72285 Yellow Locktite Pencils.
72286 Orange Locktite Pencils.
72287 Carmine Locktite Pencils.
72288 White Locktite Pencils.

TURQUOISE LEAD HOLDERS



Turquoise Lead Holders have accurately machined lead grip that grasps the lead like a jeweler's chuck. It grips the lead securely yet will not shear it off. Barrel is aluminum finished Turquoise Blue. Grade Indicator can be set to show degree of lead used.

EACH DOZEN

72289 Turquoise Lead Holder.....

See Price List Inside Back Cover

Some Page 228 Johnson

Koh-I-Noo

Meh-I-Noo men plastic ads respecti

Koh-I-N

leagon, yel

12292 Koh-

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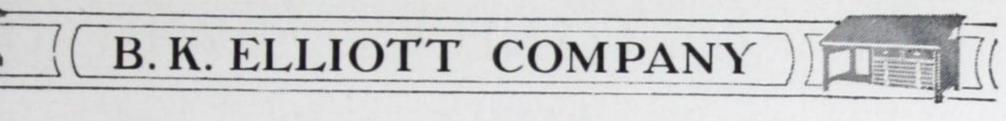
Eldorado De body is o

233 Eldor

Venus A

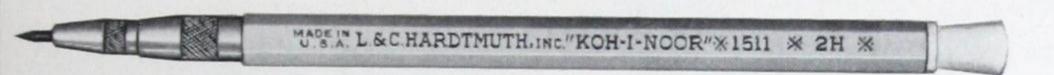
wellad. Har

35 Venus



DRAFTSMAN'S AND ARTIST'S PENCIL

KOH-I-NOOR ARTISTS' PENCILS



Koh-I-Noor Artist Pencils, 6¼" long. Stainless steel screw points. White, Red or een plastic tips to designate degrees. Two Models, to hold 6B to 2B and B to 9H ds respectively.

EACH DOZEN

Koh-I-Noor Artist Pencils, Double End. 6¾" long. Stainless Steel screw points. xagon, yellow polished.

EACH DOZEN

92 Koh-I-Noor Double End Pencil....

ELDORADO REFILL DRAWING PENCILS

u.s.a.Dixon's ELDORADO 1163 HB



Eldorado Refill Drawing Pencils, Single or Double Pointed. Very light in weight, body is of wood, finished mahogany. Fluted grips, and positive clutch mechanism.

EACH DOZEN

- 93 Eldorado Refill Pencil, Single End.....
- 94 Eldorado Refill Pencil, Double End.....

VENUS ARTIST PENCIL



Venus Artist Pencil is designed to provide slip-proof and crush-proof gripping of lead. Has a concealed patented clutch, preventing lead breakage.

EACH DOZEN

5 Venus Artist Pencil.....

See Price List Inside Back Cover





REFILL LEADS

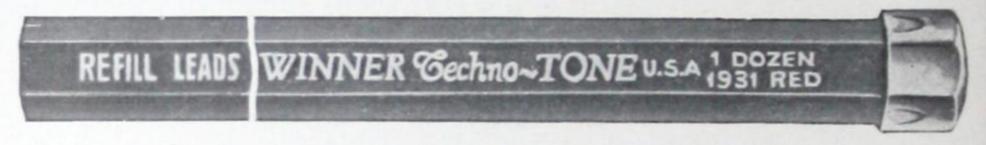
All leads listed are of the same high quality and grading as the pencil listed on pages 228 and 229. All leads are 51/8 inches long, and of uniform diameter to fit any of the Draftsman's and Artist's Pencils.

WINNER TECHNOTONE LEADS



PER TUBE PER DOZ. TUBES

72301 Winner Leads, 15 Degrees: 4B to 9H, 12 leads in plastic tube.



WINNER TECHNOTONE COLORED LEADS

Same length and diameter as black refill leads. They are exceptionally strong and will not break under normal pressure. Made in Red, Blue, Green, Yellow, Orange, Carmine and White. Packed 1 dozen in plastic tube.

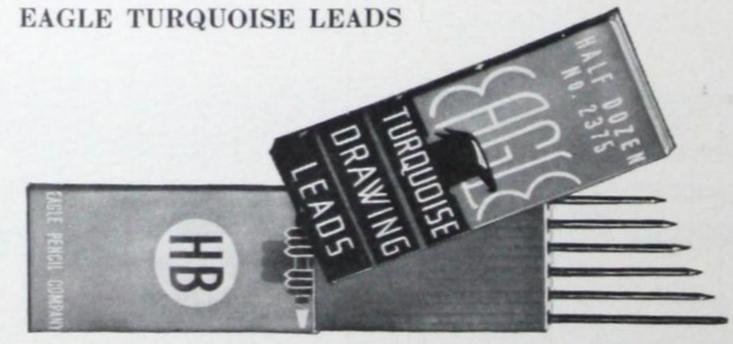
TUBE DOZEN TUBES

KOH-I-NOOR REFILL LEADS



PER BOX PER DOZ. BOXES

72303 Koh-I-Noor Refill Leads, seventeen degrees, 6B to 9H. Six leads in box, twelve boxes to carton....



PER BOX PER DOZ. BOXES

72304 Turquoise Leads, 12 degrees: 4B to 6H, 6 leads to box, 12 boxes to carton.....

See Price List Inside Back Cover

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The inst

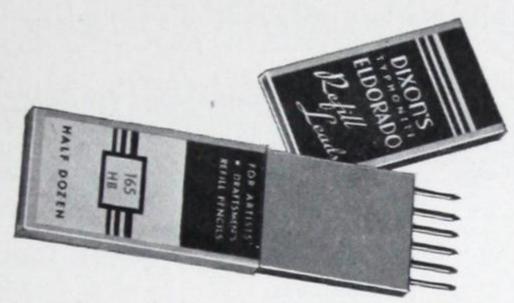
2313 Norr 2314 Norr 2315 Norr





REFILL LEADS

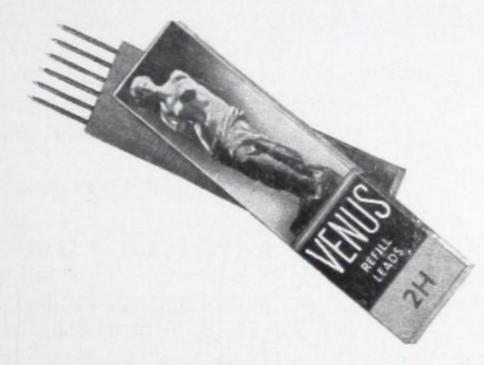
ELDORADO REFILL LEADS



PER BOX PER DOZ. BOXES

Eldorado Leads, 12 degrees: 2B to 8H. 6 leads to box, 12 boxes to carton....

VENUS REFILL LEADS



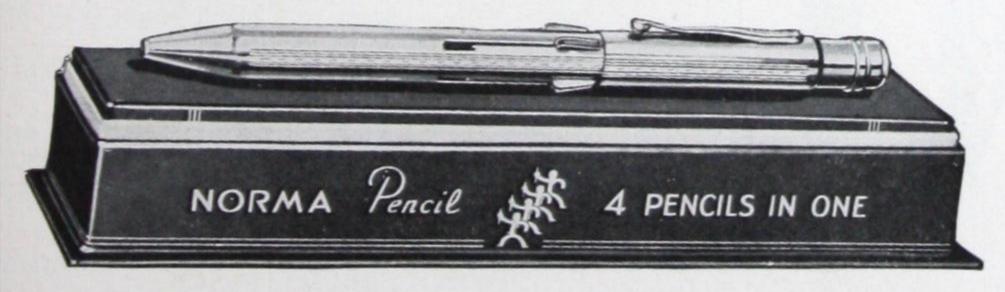
PER BOX PER DOZ. BOXES

Venus Leads, 16 degrees: 5B to 9H. 6 leads to box, 12 boxes to carton.....

AUTOMATIC PENCILS

NORMA

The instant 4-color Pencil. Writes Black, Red, Blue or Green at will. Mechanism ully guaranteed. Norma has a large replaceable eraser, and a magazine with a reserve 12 assorted leads.



EACH

Norma Pencil, 10K Gold Plate....

See Price List Inside Back Cover

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Autopo

easer ferru

Autopo

723305 At

723306 At

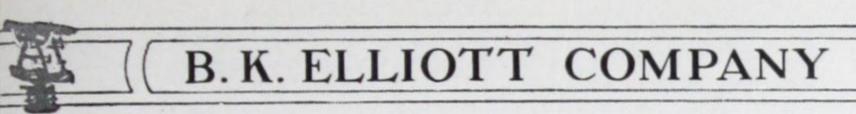
723311 Au

723312 Au

PENCI	LS	
HARDTMUTH I	HOLDERS	Елен
723201 Holder. Holds large oversize leads 7/3 with Black Tip. Nickel-plated meta	2" diameter. Hexagon, Red Polis	h,
723202 Holder. Same as above, but with two	points	
No. 1 and 1 who prefer in this form	No. 2 degrees for those Each this well known article	ER Box
723204 Sanguine Lea made of the in the Sang guine Sticks	e same material used Each quine Pencil and San-	ER BOX OF SIX
723205 Black Graphic sketching as surfaces. Management of the sketching as surfaces.	K GRAPHITE LEADS te Leads are used for Product of the Covering large Each of the Index of the In	ER BOX
vantages of but retains in 3 degrees	be enthusiastically re- Each color eliminates the disadthe the natural charcoal its advantages. Made	ER BOX OF SIX
723207 Blaisdell Cha wrapped. I	For artists' sketching, Each I c. 3 degrees: hard,	PER DOZEN
723208 A freehand description of the pencil with lead. Emedium	AGLE VERIBLACK brawing and sketching h a large, soft black Each D neased in wood of large diameter in sh	PER POZEN
723209 Eberhard Fal wood, large	ARD FABER "EDITOR" ber "Editor", round	PER
723210 Round, yell diameter, lead. For		PER DOZEN
C n . v		

See Price List Inside Back Cover

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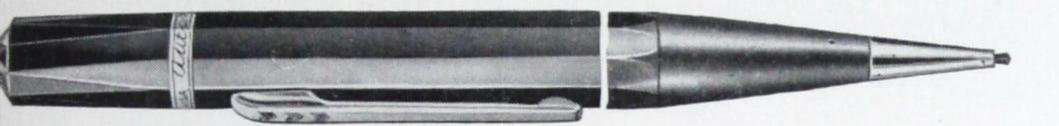




AUTOPOINT PENCILS

LIGHT — CONVENIENT — QUICK

No other pencil can be refilled as quickly



Autopoint Pencil with oversize barrel and "diamond cut" cap. Streamlined clip trim in silvonite finish.

3301 Autopoint Oversize Pencil, for standard lead



Autopoint Utility Pencil. Slender barrel with exposed eraser. Streamlined clip, ser ferrule and tip in silvonite finish.

EACH

Autopoint Double-end Pencil. For checking prints, etc. Colored leads can be used all Autopoint Pencils without danger of breakage. Clip and trim in silvonite finish.

EACH

3305 Autopoint Double-end Pencil for standard lead

3308

3309

3311

3312

AUTOPOINT LEADS

EACH

3307 Autopoint Lead "Standard," .046" diam. 13% inches long. Black 2B to 4H. 24 leads to tube......

Autopoint Lead "Standard" Colored. 1% inches long. Red, Blue, Green and Yellow. 12 leads to tube......

Autopoint Lead, "Real Thin," .036" diam. 13/8 inches long. B to 4H. 24 leads to tube.....

See Price List Inside Back Cover

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LEADS FOR AUTOMATIC PENCILS



FABER	LEADS PER TUBE 12 LEADS
723401	Red
723402	Blue
723403	Green
723404	Purple
723405	Yellow
723406	Brown
120401	William D. T.

PER TUBE 18 LEADS

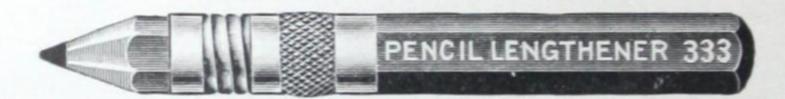
A. W. Faber Drawing Leads, 1% inches long, .046 in. diameter, black, 723408 in 8 degrees of hardness: 2B to 4H.....

PENCIL LENGTHENERS

(For utilizing short ends of Pencils)

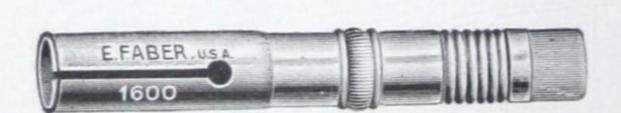


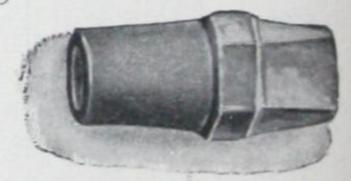
EACH DOZ. Hexagon, brass, nickel-plated ferrule, threads cut in ferrule



EACH Doz. 723410 Fitted with short hexagon, yellow polished pencil

PENCIL POINT PROTECTORS AND ERASER TIPS





Doz. GROSS Pencil Point Protector, with eraser..... 723411 Rubber Pencil Tip-Wedge-Hexagon Top.....



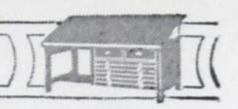
GROSS Doz.

> See Price List Inside Back Cover PAGE 234 Johnson

72353 Pri

72354 Pri





PRISMACOLOR COLORED PENCILS

ROUND SHAPE



EAGLE ME TURQUOISE PRISMACOLOR



Prismacolor Pencils are made in 36 glowing colors that are light-resistant, waterproof, smooth and strong. Can be furnished in sets or individual colors.

901	Indigo Blue	924	Crimson Red
902	Ultramarine	925	Crimson Lake
903	True Blue	926	Carmine Red
904	Light Blue	929	Pink
905	Aquamarine	930	Magenta
908	Dark Green	931	Purple
909	Grass Green	932	Violet
910	Emerald Green	935	Black
911	Olive Green	936	Dark Grey
912	Apple Green	937	Light Grey
915	Lemon Yellow	938	White
916	Canary Yellow	939	Flesh
917	Yellow Orange	942	Yellow Ochre
918	Orange	943	Burnt Ochre
921	Vermilion Red	944	Terra Cotta
922	Scarlet Red	945	Sienna Brown
923	Scarlet Lake	946	Dark Brown

Each Dozen Gross

351 Prismacolor Colored Pencils.....

PER SET

2354 Prismacolor Colored Pencils, 36 to set

VERITHIN COLORED PENCILS



Hexagon shaped, thin lead, colored pencils that are strong and will hold a sharp oint. Made in 36 brilliant colors.

734 White
734½ Light Grey
735 Canary Yellow
735½ Lemon Yellow
736½ Orange Ochre
736½ Orange Ochre
737 Orange
737½ Sea Green
738 Grass Green
738½ Light Green
739 Green
739½ Olive Green

2355

740 Ultramarine
740½ Sky Blue
741 Indigo Blue
741½ Azure Blue
742 Violet
742½ Lavender
743 Pink
743½ Rose
744 Scarlet Red
745 Carmine Red
745½ Terra Cotta
746 Sienna Brown

746½ Tuscan Red
747 Black
747½ Dark Grey
748 Red and Blue
750 Vermilion
751 Emerald Green
752 Purple
755 Golden Brown
756 Dark Brown

Flesh

EACH DOZEN GROSS

Verithin Colored Pencils

PER SET

See Price List Inside Back Cover

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DIXON'S "BEST" COLORED PENCILS

ROUND SHAPE

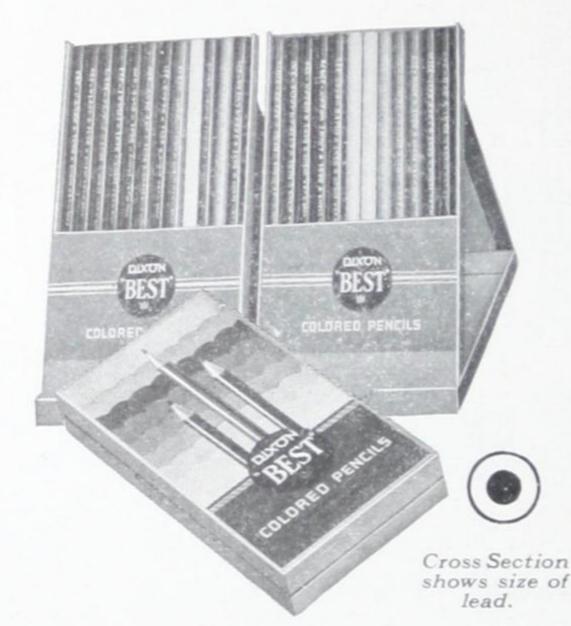
MADE IN U.S.A. DIXON & BEST & RED - 349

36 colors, each pencil finished same color as its lead.

	do colors, cuer b									
3531	White Lemon Yellow Golden Yellow	$321\frac{1}{2}$	Lake Red	328	Paris Blue	356	Olive Green May Green Light Green	3351	Raw Umber Burnt Ochre Terra Cotta	
000	Golden Tellow	022	I IIII	020	DRY DIGC					
3511	Dark Chrome	3331	Rose Madder	330	Ultramarine	354	Green	335	Sepia	
201	Orange	2021	Purnle	350	Rhie	3551	Prussian	343	Brown	
	Orange	0202	1 dipie	000	Dide	0003	11000000			
349	Vermilion	3225	Light Violet	355	Viridian		Green		Gray	
	Carmine	323	Violet	3251	Verdant Green	329	Flesh	3311	Slate Gray	

3241 Yellow Ochre 331 Black PER DOZEN PER GROSS

723601 Dixon's "Best" Colored Pencils.....



DIXON'S BEST PENCILS IN SETS

PER SET

723602 Set of Seven colors, assorted 723603 Set of Twelve colors, assorted.....

723604 Set of Twenty-four colors, assorted

723605 Set of Thirty-six colors, assorted.....

Assortments in cloth-covered slide boxes.

DIXON'S "THIN-EX" CRAYON PENCILS

MADE IN U. S.A. DIXON V THINEX V WHITE 390

Hexagon shape. 36 colors. Thin leads.

374 373 412	White Lemon Yellow Yellow Dark Chrome Gold Ochro	383 369 426	Scarlet Lake Red Tuscan Red	377 418 394	Light Violet Violet Sky Blue Light Blue	416 414 391	Olive Green	397 398 430	Terra Cotta Burnt Sienna Warm Sepia	
	Gold Ochre Orange		Pink Lavender		Azure Paris Blue		Light Green Green		Brown Gray	
					Blue		Prussian	432		

		Green	379 Bla	ck
			PER DOZEN	PER GROSS
723606	Dixon's "Thin-Ex" Colored Pencils			
				PER SET
	Set of Seven Colors, assorted			
723609	Set of Twenty-four colors, assorted			
723610	Set of Thirty-six colors, assorted			2.2.2

See Price List Inside Back Cover

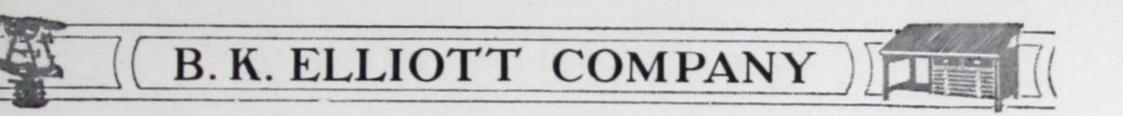
monor Page 236 Johnson

Red* Dark Red Vermilion Pink* Mauve*

72374 Dix

Blaisde polished M

Made



PENCILS

VENUS "UNIQUE" COLORED PENCILS

WAX CRAYONS—THIN LEADS

AMERICAN PENCIL CO. MAREAN - VENUS / UNIQUE - RED-1207

MADE IN FOLLOWING COLORS

Violet Yellow* Olive Green Ochre Purple* Chrome Yellow Field Green White Blue* Orange* Brown* Gray* Light Blue* Green* Sepia Black Light Green Ultramarine Red-Blue Maroon

PER GROSS PER DOZEN

"Unique" Colored Pencils...

ed*

ink*

2371

2372

2373

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ark Red

ermilion

PER SET

"Unique" Assortment of 24 colors and Pencil Holder in Box......

Unique" Assortment of 12 colors, the 11 colors marked with asterisks and 1 combination Red-Blue Pencil in Box.....

SILVER CRAYON PENCILS

The Best Pencil For Marking Blue Prints

MADE IN U.S.A . Dixon SILVER . 1936

PER GROSS PER DOZEN

CHINA MARKING PENCILS



Blaisdell China Marking Pencils, for marking on Glass, China, Steel, highly blished Metal, Tile or other highly glazed surfaces.

Made in 12 colors, as follows: Light Blue, White, Crimson Red, Brown, Blue, idnight Blue, Red, Vermilion Red, Yellow, Green, Purple and Black.

PER GROSS PER DOZEN

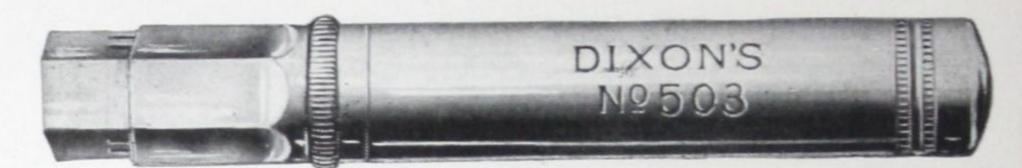
See Price List Inside Back Cover

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DIXON'S LUMBER CRAYON HOLDER



72381

EACH

Doz.

72381 Dixon Lumber Crayon Holder.....

Made in JERSEY CITY, N.J. U.S.A. by

No. 521 **DIXON** BLUE LUMBER CRAYON

JOSEPH DIXON CRUCIBLE CO.

72382

GROSS

Doz.

Burnt Co

Terra Co

Lemon Y

White

Purple

"M(

72392 A

72382 Dixon's Lumber Crayon, blue, hexagon..... 72383 Dixon's Lumber Crayon, red, hexagon.....

72384 Dixon's Lumber Crayon, white, hexagon.....

72385 Dixon's Lumber Crayon, yellow, hexagon.....

72386 Dixon's Lumber Crayon, black, hexagon, extra soft.....

86 **DIXON** SOLID BLUE CRAYON

72387

GROSS

Doz.

Dixon's Solid Crayons, round, 7 inches long. Green, black, golden yellow, red and blue.....

Dixon's Solid Crayons, 3½ inches long..... 72388

Burnt Ochre

Carmine Sepia

Terra Cotta

Green

Black Golden Yellow

Red

Blue Violet

Pink

Brown

Yellow Ochre Lemon Yellow Gray

Orange

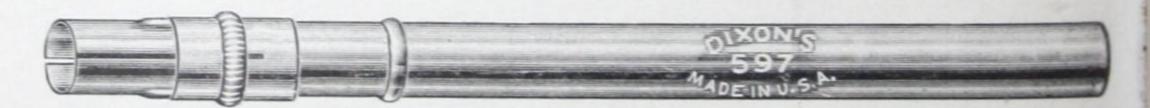
Azure

Purple

Olive Green Ultramarine

Sky Blue White

Light Green Lake Red



72389

Doz.

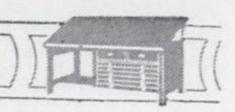
EACH

Dixon's Solid Crayon Holder, nickel-plated, 61/2 inches, for crayons No. 72387 and 72388.

See Price List Inside Back Cover

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PENCILS

"MONGOL" COLORED PENCILS

"Mongol" Colored Pencils can be used for painting with water color effects. To paint with pencils" simply needs "Mongols," brush and water.



72391

PER GROSS PER DOZ.

"Mongol" Colored Pencils. Round, thin, colored lead; wood polished to match lead.....

MADE IN THE FOLLOWING COLORS

Burnt Carmine Ferra Cotta Lemon Yellow Grey White

2391

Purple

Light Blue Pink Light Green Black Brown Ochre Prussian Blue

Prussian Green
Orange
Brown
Heliotrope
Dark Blue
Red

Yellow
Dark Green
Carmine
Olive Green
Vandyke Brown
French Green

"MONGOL" COLORED PENCIL ASSORTMENT

PER BOX

of round "Mongol" Colored Pencils in double folding, cloth covered easel box. The box folds to convenient pocket size.





"MONGOL" COLORED PENCIL ASSORTMENT

PER BOX

72393 12 assorted round "Mongol" Colored Pencils, listed below, in handy, folding, cloth covered easel box

> Purple Light Blue Light Green Black

Orange Brown Heliotrope Dark Blue Red Yellow Dark Green Carmine

See Price List Inside Back Cover

Some Page 239 Johnson





The D

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point is ob

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724101 I

724102 I

724103 F

724104 E

Control.

OBVORS.

Draftsman

724105 P

724106 P

724107 E

724108 Ex

WATER COLOR PENCILS

"ANADEL" INDELIBLE PENCILS

"Anadel" Colored Pencils are hexagonal in shape, rounded edges and "safety" mouthpiece tip. Each pencil is finished same color as its lead.

They are exceptionally strong, brilliant, and are water soluble. Popular for colored writing, checking detail drawings, etc.

You can also paint with "Anadel".



MADE IN Dixon BLUE ANADEL 1950

Made in 24 colors, as follows: White, Lemon Yellow, Yellow, Golden Ochre, Orange Red, Lake Red, Carmine, Pink, Magenta, Violet, Azure, Blue, Indigo, Emerald Green, Green, Forest Green, Olive Green, Neutral Tint, Terra Cotta, Burnt Sienna, Warm Sepia, Brown, Black, Red and Blue.

72401 "Anadel" Pencils......................

"VENUS" WATER COLOR PENCILS



To produce wash and water color effects. Apply color evenly. Then go over surface with a moist water color brush. Definite water color lines are obtained by dipping pencil point in water.

COLORS

Purple*, Blue*, Light Blue*, Ultramarine Blue, Green*, Light Green*, Field Green, Red*, Vermilion, Chrome Yellow*, Orange*, Yellow, Black*, Mauve, Gray, Pink*, Heliotrope*, Dark Red, Maroon*, Olive Green, Ochre, Brown, Sepia, White.

PER GROSS PER DOZEN

72405 Venus Water Color Pencils.....

PER SET

72407 Set contains 12 colors marked with asterisks.

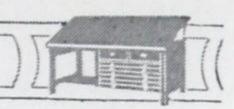
In folding cardboard easel boxes..........

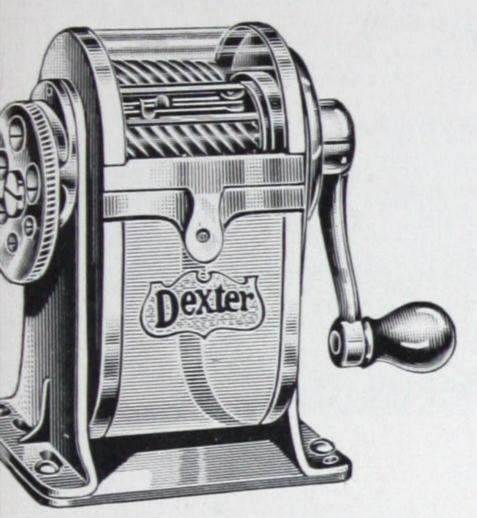
See Price List Inside Back Cover

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24107

B. K. ELLIOTT COMPANY





PENCIL SHARPENERS



Showing point made with sharpeners Nos. 724102 and 724106 fitted with special draftsman's cutters, removing the wood only from the pencil, leaving the graphite, so that it may be sharpened to suit draftsman.

The Dexter Pencil Sharpener is of excellent workmanship and finish. Sharpens Lead nd Crayon Pencils of all sizes and prevents waste, as the cutting stops when the proper oint is obtained. Can be adjusted for any desired point, blunt to fine.

Automatic Lubrication of all working parts. The shaving receptacle is of highly olished celluloid, metal trimmed, locks securely and is easily removed.

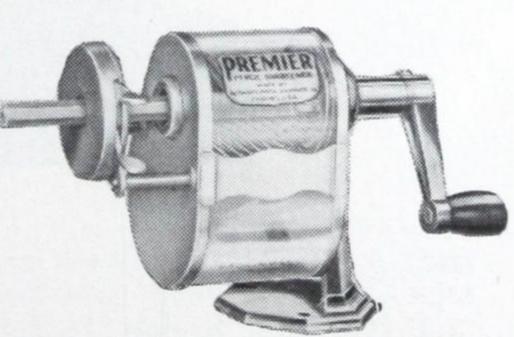
	EACH
Dexter Sharpener with regular cutters	
Dester Charpener with 1 ft - 1 1 1	
Dexter Snarpener with draftsman's special cutters	
Extra Cutters for Dexter Regular	
Extra Cuttors for Douter Duestamon's Special	
Extra Cutters for Dexter Draftsman's Special	
	Dexter Sharpener with regular cutters Dexter Sharpener with draftsman's special cutters Extra Cutters for Dexter Regular Extra Cutters for Dexter Draftsman's Special.

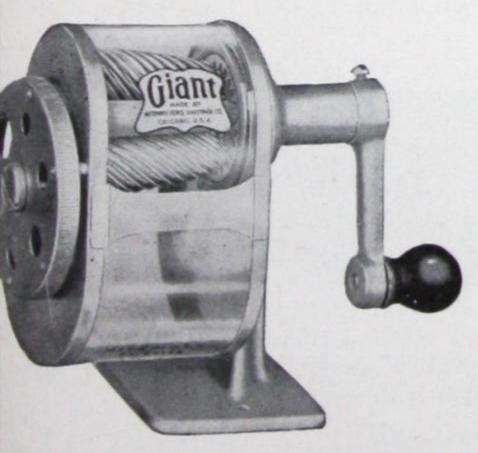
Premier Sharpener, with Automatic Feed ontrol. Will sharpen all current size pencils or Furnished with either Regular or ayons.

raftsn	nan's Cutt	ers.			E. au
24105		Sharpener		Regular	Each
24106	Premier	Sharpener	with	Drafts-	

man's Cutters..... Extra Cutters for Premier, Regu-

24108 Extra Cutters for Premier, Draftsman's.....





Giant Sharpener. Popular and low priced. Accepts all size pencils. Solid steel cutters. Manual feed.

EACH

724109 Giant Sharpener.....

PER PAIR

Cutters for Giant Sharpener..

See Price List Inside Back Cover

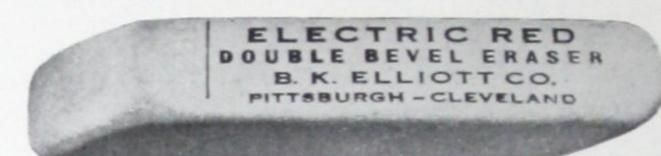
mono Page 241 Johnson



ERASERS

DOUBLE BEVEL PENCIL ERASERS

The Electric Eraser is the best pencil eraser made. Does not smudge.



GROSS PER DOZ.

72421 Electric Red Double Bevel Pencil Erasers.....



GROSS PER DOZ.

72422 Electric Red Double Bevel Pencil Erasers.....



GROSS PER DOZ.



GROSS PER DOZ.

72427 "Carnation" Eraser, large size. The pink of perfection in pencil erasers. Soft and pliable. Packed 1 dozen in box..

See Price List Inside Back Cover

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72431

"Para for eras other de

72432 72433

72434

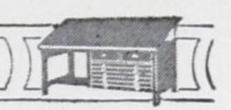
72435

"Rub messy lines. (

72436

72437





ERASERS

Ellcopink

B. K. ELLIOTT CO.

PITTSBURBH
CLEVELAND, DETROIT

"ELLCOPINK"

"Ellcopink" Erasers are of the softest texture possible, yet they contain abrasive compounds to permit the removal of pencil and crayon marks from drawing, tracing paper and tracing cloth without injury.

EACH Doz. GROSS

72431 "Ellcopink" Eraser. Medium size, 12 to box

"Parapink"—of soft pliable rubber. Unexcelled for erasing and cleaning on tracing paper or other delicate surfaces. Made in two sizes.



Each Doz. Gross



"Pink Pearl." Soft, pink, pliable pencil and cleaning eraser, double beveled. Made in two sizes.

Each Doz. Gross

"Rubkleen" rubs clean without smearing. No messy "crumbling". Will not weaken inked lines. Green color, block shape, in two sizes.



Doz. Gross

See Price List Inside Back Cover

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charcoal

72453

72454

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12458 4

12459

ERASERS

"TRACINK"

The most efficient ink eraser ever manufactured, especially adapted for the use of draftsmen on tracing cloth. The "Tracink" will make from three to five erasures on the same spot of a tracing and leave the surface of the tracing cloth unimpaired for remarking and the ink will not blot or spread.





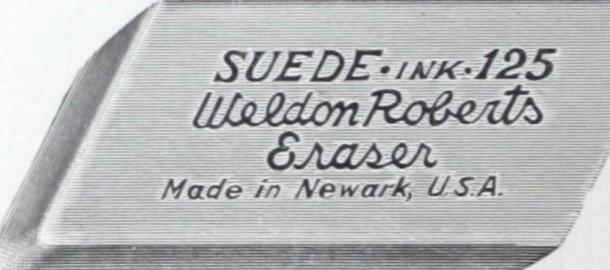


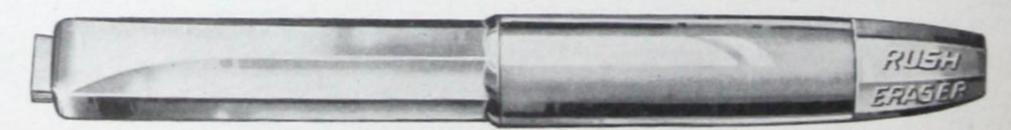
Illustration Full Size

Suede—a satisfactory ink eraser for tracing cloth. Soft—of gray rubber.

EACH Doz.

72445 Suede Ink Eraser....

FYBRGLASS INK ERASER



An efficient eraser, made of fine spun glass with the appearance of white bristle, in a plastic holder. Especially adapted for erasures on tracing cloth.

See Price List Inside Back Cover

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ERASERS

An eraser in pencil form, paper wrapped with the popular Blaisdell string-pull for sharpening.

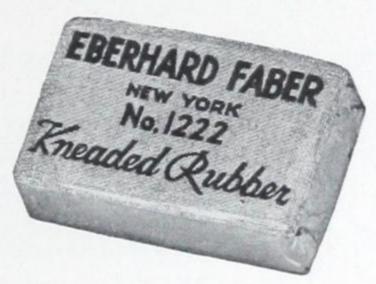


Doz. Gross

72451 "Klenzo" Eraser, for ink.....

72452 "New Way" Eraser, for pencil....

Kneaded Rubber, a plastic that can be used over and over again, can be kneaded into any shape. For removing and highlighting chalks, charcoal, etc. Made in two sizes.



EACH BOX OF 36

72453 Small kneaded rubber.....

Box of 12

Doz

72454 Large kneaded rubber....

ART GUM



For cleaning engravings, drawings, paintings, books and papers. Is soft and pliable and entirely free from grit. It wears itself away, but does not mar or scratch the surface of the paper.

72457 Art Gum, 21/4 x 11/8 x 11/8 inches......

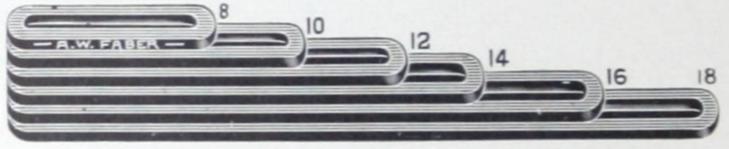
See Price List Inside Back Cover

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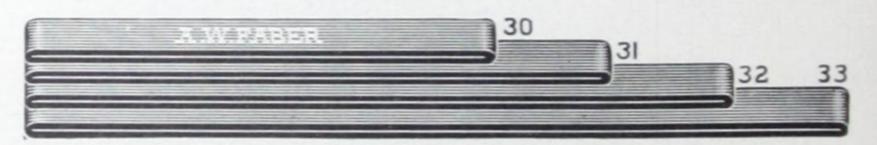
ERASERS

Erasing Machine Erasers, 7/8" long, to fit all makes of Erasing Machines PER GROSS 724601 Soft Pink Erasers..... 724602 Soft Red Erasers..... Soft Gray Erasers..... 724603 "KLEENZIT" No Fuss Just "Kleenzit" No Muss BETTER PRINTS! CLEANER DRAWINGS! SHARPER LINES! "Kleenzit" is a drafting powder, specially prepared for making clean, black, sharpline drawings. No more smearing. No more lifting of T-square, triangles or drafting machine. No more washing of tools. "Kleenzit" keeps them clean. PER BOX PER DOZ. PER GRO. 724604 "Kleenzit"..... GRAY RUBBER BANDS



1 Inch Wide

PER LB. PER 1/4 LB. 724605 Size 8 Gray Rubber Bands, 7/8 inch long..... 724606 Size 10 Gray Rubber Bands, 11/4 inches long..... 724607 Size 12 Gray Rubber Bands, 15/8 inches long..... 724608 Size 14 Gray Rubber Bands, 2 inches long..... Size 16 Gray Rubber Bands, 2½ inches long..... Size 18 Gray Rubber Bands, 3 inches long.....



1/8 Inch Wide

PER LB. PER 1/4 LB. Size 30 Gray Rubber Bands, 2 inches long..... 724611 Size 31 Gray Rubber Bands, 2½ inches long..... Size 32 Gray Rubber Bands, 3 inches long..... 724613 Size 33 Gray Rubber Bands, 3½ inches long.....



1/4 Inch Wide

PER LB. PER 1/4 LB.

724615 Size 62, 1/4 inch wide x 21/2 inches long..... 724616 Size 64, 1/4 inch wide x 31/2 inches long..... Rubber Bands, Assorted. 724617

See Price List Inside Back Cover

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724701

724701 G

724702 G 724703 G

724705 G

724706 G 724707 G 724708 G 724709 G 724710 G 724711 G

724712 C

724713 P

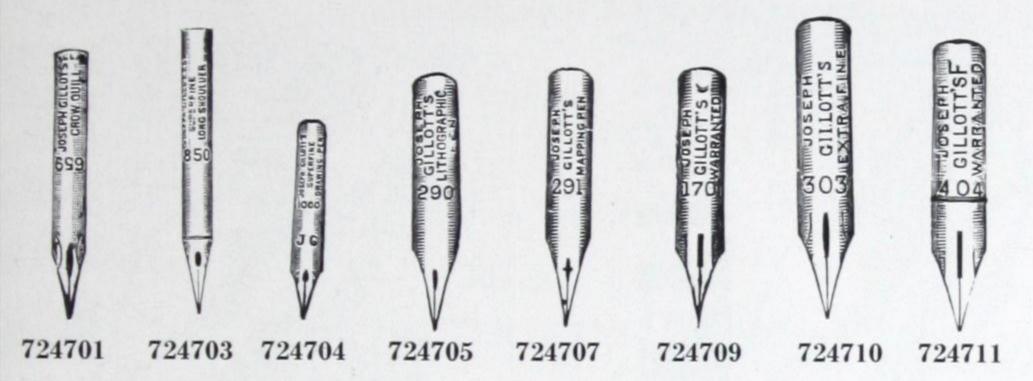
724714 P





STEEL PENS

FOR LETTERING AND DRAWING



PER PER Doz. Gross

Gillott's Crow Quill Pens (659), on cards, with holder 24701 24702 Gillott's Crow Quill Pens (659), loose..... 24703 Gillott's Crow Quill Pens (850), long shoulder, on cards..... 24704 Gillott's Drawing Pens (1000), superfine, on cards..... 24705 Gillott's Lithographic Pens (290), on cards, with holder..... 24706 Gillott's Lithographing Pens (290), loose, in gross boxes...... 24707 Gillott's Mapping Pens (291), on cards with holder..... 24708 Gillott's Mapping Pens (291), loose, in gross boxes..... 24709 Gillott's Mapping Pens (170), loose, in gross boxes..... 24710 Gillott's Mapping Pens (303), loose, in gross boxes..... 24711 Gillott's Mapping Pens (404), loose, in gross boxes.....



724712

PER EACH CARD

Crow Quill Pen, with improved holder, having cork finger-piece, 12 pens on card, each with holder.....

PENHOLDERS



724713

PER

EACH Doz.

24713 Penholder, ebony, for crow quill pens.....

724714

PER

EACH Doz.

24714 Penholder, spiral cedar, steel tip, for pens Nos. 170, 290, and 291

See Price List Inside Back Cover

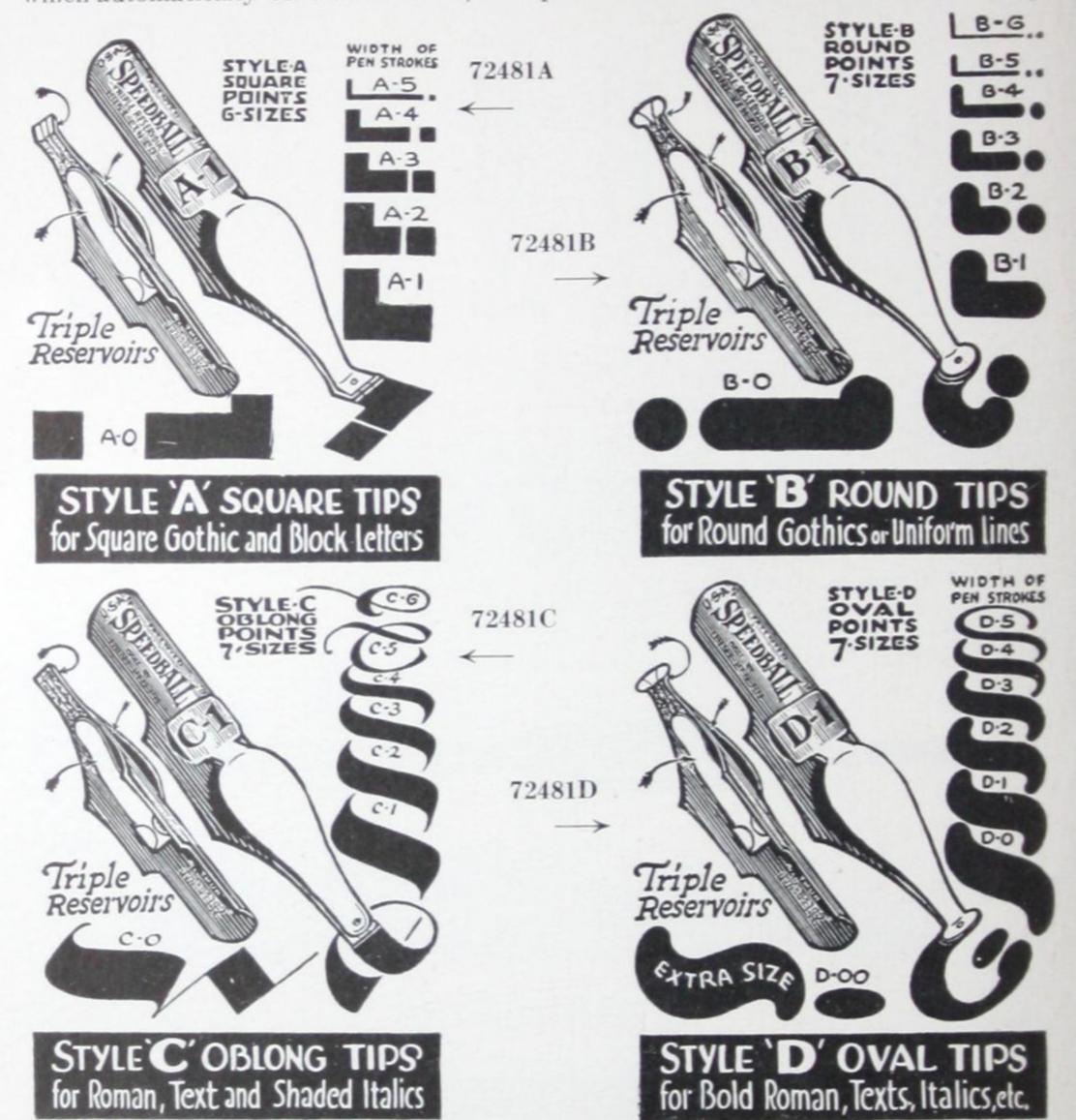
mon Page 247 Johnson





SPEEDBALL LETTERING PENS

A speedball is the fastest and the most easily manipulated drawing and lettering pen ever devised. Each pen is fitted with a flexible, brass, double-reservoir ink-retainer which automatically controls the flow, and spreads the color over the entire marking tip.



EACH PER DOZEN

72481 A-B-C or D Speedball Lettering Pens.....



SPEEDBALL COLORED INKS

Specially made for pen lettering. Free flowing and dries with a soft, velvet finish. Brilliant colors.

COLOR ASSORTMENT

Green Dark Blue Turquoise Blue Emerald Orange Black

nge Yellow White EACH PER DOZEN

72482 Speedball Ink, 2-ounce jars......

Ask for complete Speedball catalog

See Price List Inside Back Cover

mono Page 248 Johnson

72491 Leo 72492 Leo

72493 Sin

AUTOM

72494 Au Wid

72495 Au





LEONHARDT'S BALL POINTED PENS



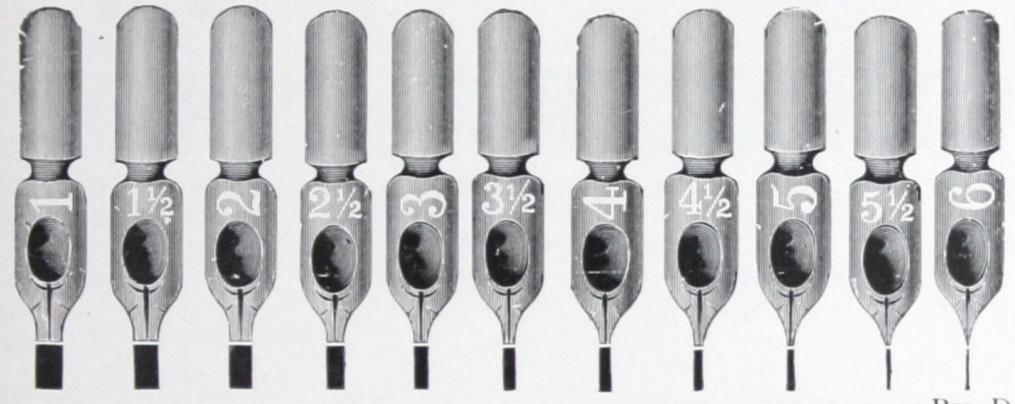
72491



72492

Doz. Gross

ROUND WRITING PENS

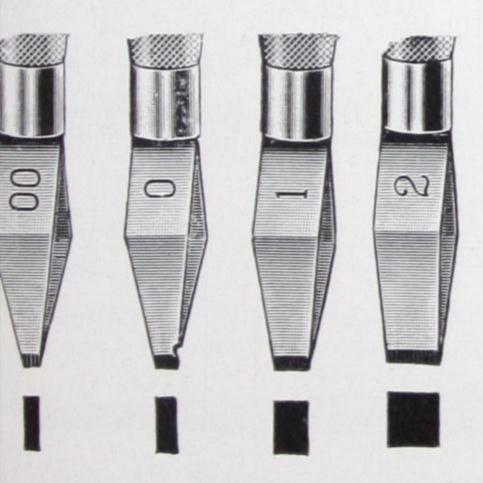


PER Doz.

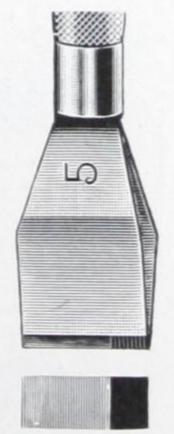
2493 Single Pointed Pens, Nos. 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6......

AUTOMATIC MARKING PENS

AUTOMATIC SHADING PENS







EACH

2494 Automatic Marking Pens, Nos...... 00 0 1 2 3 4 5 Width of Nib, inches....... $\frac{1}{16}$ $\frac{3}{32}$ $\frac{1}{8}$ $\frac{3}{16}$ $\frac{1}{4}$ $\frac{3}{8}$ $\frac{1}{2}$

See Price List Inside Back Cover

mono Page 249 Johnson





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12512 Hig

72513 Hig

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72514 His

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72515 En

Blue-J

pens. Exc

72516 Bl





72501



72504

72504 Fluted, soft white rubber tip, natural polished, taper cedar handle.....



72505

72505 Cedar finish, medium taper, hard rubber tip......



72506

72506 Taper cork tip, natural finish..... PER Doz. Each



72507

See Price List Inside Back Cover

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B. K. ELLIOTT COMPANY



HIGGINS' AMERICAN DRAWING INKS





3/4 oz. 1/2 Pt. Pt. Qt.

2511	Higgins' General Black Ink	Еасн
2512	Higgins' Waterproof Black Ink	Еасн
2513	Higgins' Colored Inks made in the following of	colors,
	all waterproof:	Еасн

Yellow	Violet	Neutral Tint
Orange	Blue	White
Orange Red (Vermilion)	Turquoise	Brick Red
Red (Scarlet)	Green	Russet
Carmine Red	Leaf	Brown
Red Violet		Indigo

In ordering No. 72513, please state color of Ink desired

HIGGINS' WRITING INKS

Eternal Black Ink. Proof against age, air, moisture, sunshine and chemical eradiators, its beautiful lustrous black accords the utmost in dignified appearance. Widely sed for records, contracts and general correspondence. Standard for penmanship classes. xcellent for fountain pens if care is taken to avoid mixing with other inks.

2 oz. ½ Pt. Pt. Qt. 2514 Higgins Eternal Ink EACH

Engrossing Ink-For fancy penmanship, lettering diplomas, music writing and for ngrossing testimonials and other documents.

1½ oz. ½ Pt. Pt.

Blue-Black Writing Ink-Writes blue-turns blue black. The favorite for fountain ens. Excellent for records and accounts.

2 oz. ½ Pt. Pt.

2516 Blue-Black writing Ink..... EACH

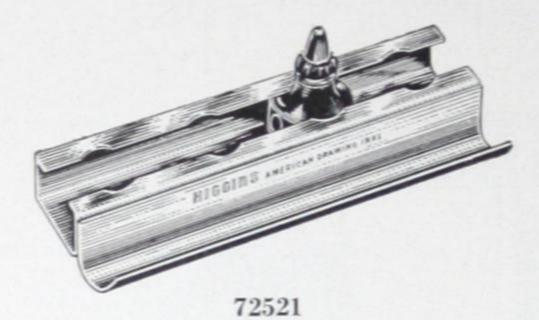
See Price List Inside Back Cover

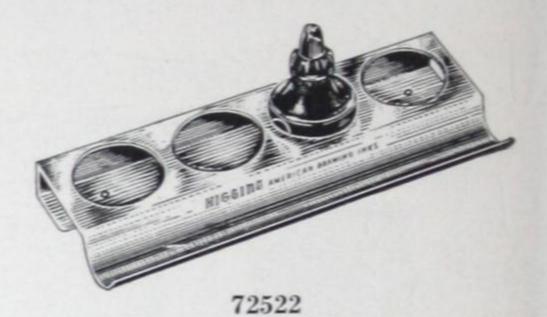
mono Page 251 Johnson



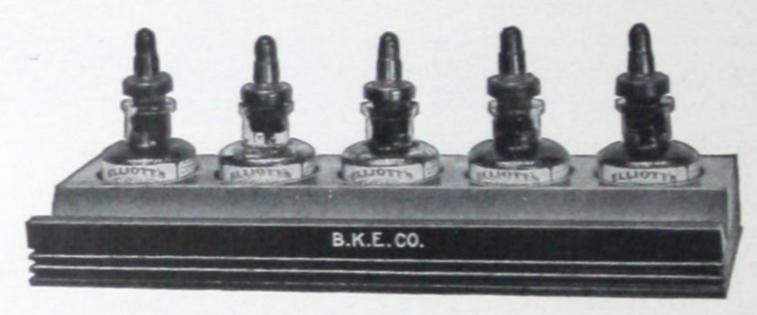


DRAWING INKSTANDS





72521 Aluminum inkstand, open platform, holds four ¾-oz. bottles......
72522 Aluminum inkstand, closed platform, holds four ¾-oz. bottles......



72523

EACH

EMPTY 3/4 OUNCE BOTTLES AND STOPPERS



72527



72528



72529

See Price List Inside Back Cover

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72531 Alt

7532 Alte

ELLI(INK

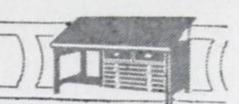
No more sheet on an art, right was ever; it moular tress the top; can be top; can

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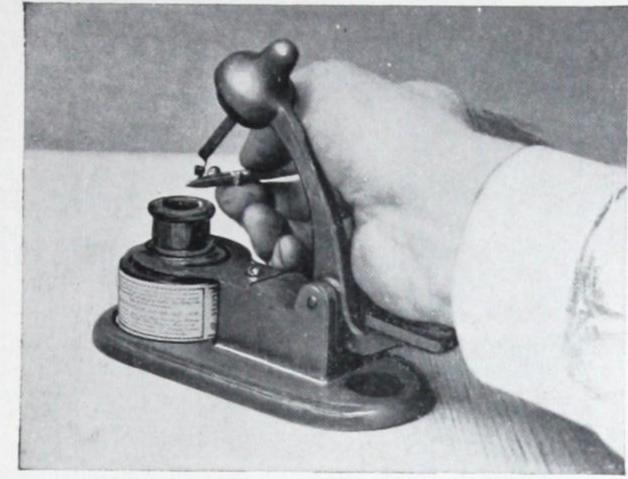




DRAFTSMAN'S PEN-FILLING INKSTANDS

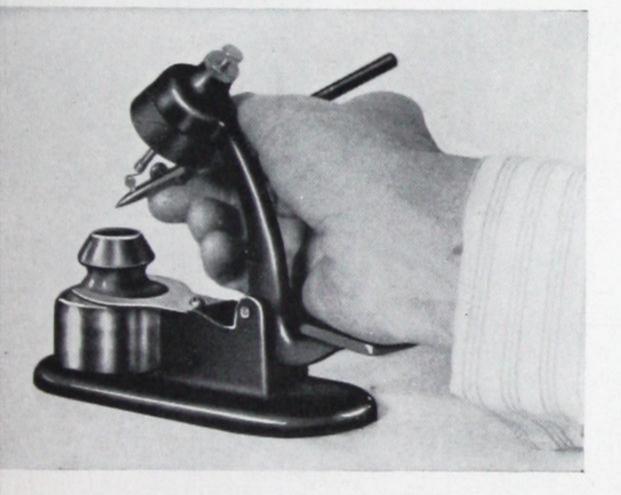
ORIGINAL TYPE

With this instrument the aftsman is able to fill his pen a few seconds. It requires to use of but one hand. Just to right amount of ink is desited between the blades with tendency to ink the outside. The ink the outside is automatically closed, preventing evapotion. The ink tand can be fely kept in the immediate cinity of the work without ar of spilling or splattering.



EACH

2531 Alteneder Original Pen-Filling Ink Stand, no bottle.....



IMPROVED TYPE

The Improved Inkstand is made with a rubber cap which fits over a specially designed ³/₄-oz. bottle furnished with the instrument. The stem is also adjustable.

Both Instruments are made of cast iron japanned in black. Colors furnished at an additional cost.

Replacements

EACH

Dipper Loops			
Washers (original)			
Rubber Caps (impr			
Bottles (improved)			

532 Alteneder Improved Pen-Filling Ink Stand with bottle.....

ELLIOTT'S "NON-SKID" INK BOTTLE HOLDER

No more skidding of your ink bottle when aced on an inclined drawing board. It stays to right where you place it. It's the neatesting ever; made of rubber, black, bell-shaped, cular tread on bottom (see illustration) to event skidding; ¾-oz. bottle fits snugly into e top; can't tip out. Make your drawing ard a safe place to set an ink bottle.

533 Ink Bottle Holder and Paper Weight Doz. Each

FLITOTTS

See Price List Inside Back Cover





ADHESIVES



3 oz. Jar

HIGGINS' DRAWING BOARD PASTE

A novel adhesive of great strength and body, especially prepared for sticking paper to the drawing board, repairing and labeling books, mounting textile samples and all similar work requiring a quick-acting and powerful adhesive.

72541 Drawing Board Paste.

SIZE..... 3 OUNCE 6 OUNCE PINT QUART

HIGGINS' PHOTO PASTE

A superior, pure-white adhesive, especially adapted to mounting photographs, engravings and scrap pictures, or for use wherever paper is mounted on paper.

72542 Photo Paste.

Size. Tubes 3 Oz. 6 Oz. Pt. Qt. Each.



6 oz. Water Well Jar



6 oz. Opal Bottle

HIGGINS' OFFICE PASTE

A fragrant, semi-liquid white paste. Spreads with ease and smoothness, catching firmly and drying quickly. Suitable for office, home and school use.

72543 Office Paste.

Size . . 21/2 Ounce 6 Ounce Pint Quart Each .

HIGGINS' MUCILAGE

Catches quicker and dries quicker than any other mucilage of its type. Contains no gum arabic.

1¼ ounce furnished with spreader top, 3½ ounce and 6 ounce with adjustable spreader top.



11/4 oz. Spreader Top

72544 Higgins Mucilage.

SIZE...... 11/4 OUNCE 21/2 OUNCE 6 OUNCE PINT QUART

See Price List Inside Back Cover

Some Page 254 Johnson

Adapte sticking par leather.

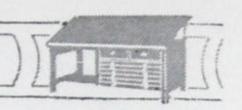
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ADHESIVES

HIGGINS' VEGETABLE GLUE

Adapted for heavy work, such as making up packages, icking paper or cloth to each other or to wood, glass, metal leather. Put up in lacquered tin cans for economy. Not arranted against discoloring paper.

2551 Higgins' Vegetable Glue.

Size..... ½ Pint Pint Quart Gallon Each.....



72551



72552



72554

	SIZE 5 OUNCE 8 OUNCE	PINT	QUART
	Each		
553	Sanford's Utopian Library Paste in glass jars without brush.		
	Size Each	PINT	QUART
554	Le Page's Glue in patent tin cans.		
	SIZE TUBES 1 OUNCE 2 OUNCE 1/2 PINT	PINT	QUART

Sanford's Utopian Library Paste in glass jars with brush.

See Price List Inside Back Cover





15704 Well SI 15705 Nests,

5707 Nests,

Nests,

21/4 incl

LUXOR WHITE RUBBER CEMENT

REG. U. S. PAT. OFF.

THE MODERN PAPER ADHESIVE



The Luxor Rubber Cement Family

Luxor White Rubber Cement is the finest adhesive known for joining paper to paper, paper to wood, glass or metal. Luxor Rubber Cement is transparent and stainless and will not wrinkle, curl or shrink. For temporary mounting apply a light coat with brush or fingers to paper only, apply paper to mount while wet. For permanent mountings apply cement to both surfaces allowing same to dry slightly, then join, pressing firmly together. Excess cement can be removed from the surface when dry by rubbing with the fingers.

	Available in Six Sizes	EA
725601	Tube, 2 oz	
725602	Screw Top Cans, ½ pint	
725603	Screw Top Cans, pint	
725604	Screw Top Cans, quart	
725605	Screw Top Cans, gallon	

LUXOR THINNING SOLUTION

FOR THINNING WHITE OR BROWN RUBBER CEMENT

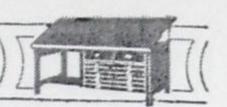
725606	½ Pint CansEach	725608	Quart CansEach
725607	Pint Cans	725609	Gallon Cans

RUBBER CEMENT DISPENSERS

	WITH BRUSH	Емрту	FILLED
725610	Glass Dispensers, Air Tight-1/2 pint E	CACH	
725611	Glass Dispensers, Air Tight—pint E	CACH	

See Price List Inside Back Cover

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FIXATIF

725701 Pastel Fixatif.

For many years the artist has been seeking a fixatif which would securely fix the pastel without changing the delicate shades of color. We now offer a new fixatif prepared expressly for fixing pastel drawings. It is crystal clear, dries absolutely matt, gives a durable protection and is guaranteed not to change the most delicate color tones.

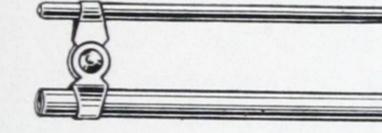
Size..... 21/4 Oz. 4 Oz. 1/2 Pt. Pt. Qt. Each.....

CHARCOAL FIXATIF

725702 Charcoal Fixatif.

A superior grade of water white fixatif prepared from a blend of selected pale gums. A light application sprayed evenly over the drawing will preserve it indefinitely. It is absolutely colorless after application.

ATOMIZERS

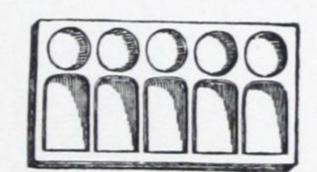


725703 Metal Each

Nickeled

CHINAWARE





EACH

Well Slab, 5 Wells and 5 Slants, $4\frac{1}{4} \times 7\frac{3}{4}$ in.

Nests, Five Saucers and Cover, $2\frac{3}{4}$ in. diam.

Nests, Five Saucers and Cover, $2\frac{1}{2}$ in. diam.

Nests, Five Saucers and Cover, $3\frac{3}{8}$ in. diam.

ELLIOTT'S ARTISTS' PALETTE KNIVES



STRAIGHT TAPERING POINT—POLISHED HANDLE Made of the finest Tempered Steel

EACH

21/4 inch blade

3 inch blade

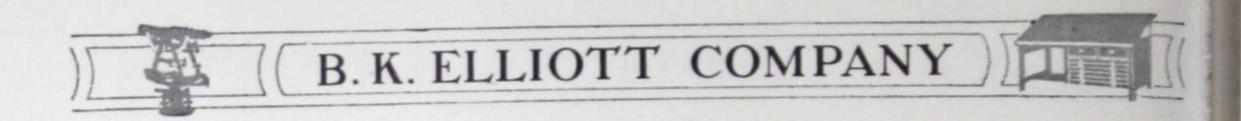
31/2 inch blade

See Price List Inside Back Cover

4½ inch blade.....

inch blade.....

Some Page 257 Johnson



WINSOR & NEWTON, Inc., PREPARED WATER COLORS

WHOLE TUBES

WHOLE PANS

7591 W. &

7592 W. & ?

For coloris

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Odmium Yelle

From Yellow

STORE

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1593 Transp

734 Transp



WHOLE TUBE

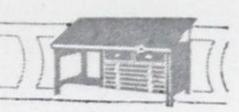
ARTIST'S WATER COLORS

Name of Color	Series No.	Name of Color	Series No.	Name of Color Series No.
Antwerp Blue	1	Carmine	4	Payne's Grey 1
Alizarin Crimson		Emerald Green	1	Permanent Blue 1
Aureolin	4	French Ultramarine.	3	Prussian Blue 1
Aurora Yellow	4	Gamboge (New)	1	Prussian Green 1
Burnt Sienna	1	Hooker's Green No.	1 1	Raw Sienna 1
Burnt Umber	1	Hooker's Green No.	2 1	Raw Umber 1
Brown Madder Aliza	arin 2	Indian Red	1	Rose Madder 4
Charcoal Grey	1	Ivory Black	1	Sap Green 1
Chrome Yellow		Indigo	2	Scarlet Lake (New) 2
Chrome Orange	1	Lamp Black	1	Sepia 2
Crimson Lake	2	Light Red	1	Scarlet Vermilion 4
Cadmium Yellow, P	ale. 4	Lemon Yellow	3	Terre Verte 1
Cadmium Yellow	4	Mauve	, 1	Vandyke Brown 1
Cadmium Yellow, D	eep 4	Mineral Violet (Pan	s) 3	Venetian Red 1
Cadmium Orange	4	Naples Yellow	1	Vermilion 4
Cerulean Blue	3	Neutral Tint	1	Viridian 3
Cobalt Blue	3	Olive Green	1	Warm Sepia 2
Cobalt Green	3	Oxide of Chromium	3	Yellow Ochre 1
			5	SERIES 1 2 3 4
72581 Winsor & N	ewton W	Tater Colors, Whole T	ubes	. Each
72582 Winsor & N	ewton W	Vater Colors, Whole P	ans	Еасн

Color Card Sent Upon Request

See Price List Inside Back Cover

mone Page 258 Johnson



EACH

WINSOR & NEWTON

PERMANENT CHINESE WHITE



Size of Small Tube



Large Tube Size 6

EACH W. & N.'s Chinese White, in small tube..... 2 W. & N.'s Chinese White, in large tube, size 6.....

TRANSPARENT WATER COLORS

For coloring or tinting mine maps, drawings, blueprints, etc., they are transparent fast to light. Can be used with brush or pen. Made in 24 colors that can be blended btain any desired shade.

COLORS mium Yellow Cerise Cerulean Blue Purple on Yellow Rose Madder Turquoise Blue Bluish Black Nile Green Ultramarine Blue Light Brown Emerald Green Prussian Blue Redish Brown let Olive Green Magenta Sepia nine Hookers Green Violet Light Gray

3 Transparent Water Colors, ½ oz.....

4 Transparent Water Colors, 2 oz..... Send for Color Card

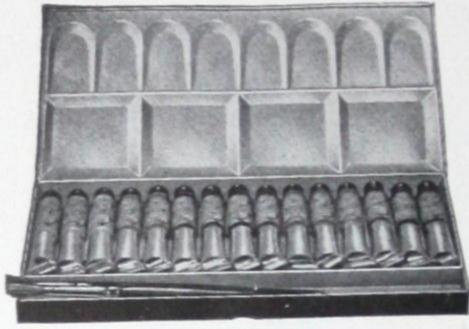
See Price List Inside Back Cover

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ARTISTS' WATER COLOR OUTFITS



72601

72601 Outfit contains 15 ½" x 3"
tubes Winsor & Newton
Water Colors selected
for their permanency
and mixing qualities.
Put up in an attractive
metal box with one red
sable and one camel hair

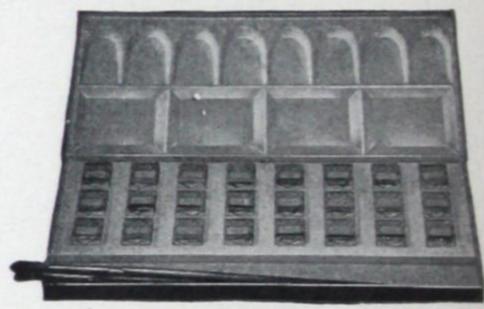
brush.....

EACH

EACH

EACH

72603 Outfit—a complete selection of 27 Winsor & Newton Water Colors in Porcelain half-pans. Put up in metal box. One red sable and one camel hair brush.



72603

72604

72604 Outfit contains 24 colors in a perfect related color wheel and one tube each white and black. One wash brush No. 7, one small red sable brush. The selection of colors is complete enough to encompass any standard color theory. For any theory using middle

values, the colors being highly transparent, can be brought to middle values by thinning the dark ones further than usual with water or mixing with Chinese White. To dull the tones add complement or black......

See Price List Inside Back Cover

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EACH

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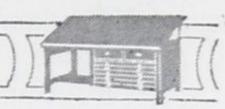
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BRUSHES FOR WATER COLOR PAINTING

ELLIOTT'S LONDON-MADE FINEST RED SABLE BRUSHES



Illustration Actual Size

11 "University" Brushes

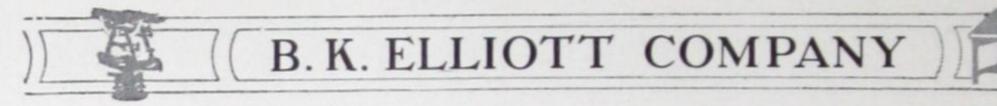
SIZE...... 0 1 2 3 4 5 6 7 8 10 12 EACH.....

From one of England's foremost brush makers comes a new, genuine I sable water color brush, the "University," for the artist, designer, oucher and illustrator. This super-quality brush is made of the finest re red sable hair, properly formed to give a perfect natural point. The ir is full of life and spring and will remain so until the brush is worn to the trush is properly wrapped and vulcanized in heavy nickel plated.

ass ferrules on polished handles, correctly balanced.

mono PAGE 261 Johnson

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OXHAIR SINGLE STROKE LETTERING BRUSHES

SERIES No. 65

(For Oil or Water Color)

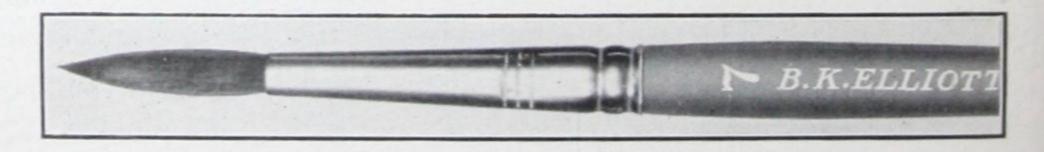
An extremely fine one-stroke brush with clean square chisel edge that will work with oil, japan or water.



72621—Size, Inches ½ 3/16 ½ 5/8 ½ 5/8 3/4 7/8 1 1½ 1½ Each

CAMEL HAIR BRUSHES—SERIES 3088

For water color painting—polished handles—metal ferrules—fine quality camel hair—that points well.



72622 Size..... 1 2 3 4 5 6 7 8 9 10 11 12 Each.....

All illustrations, this page, actual size See Price List Inside Back Cover

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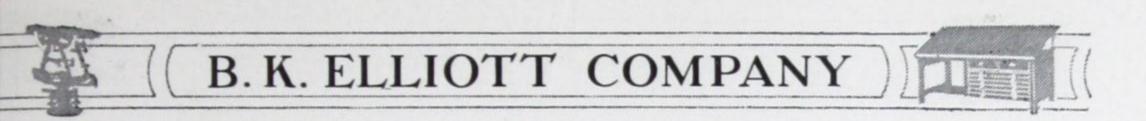
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STEEL TAPE STANDARDS

TENSION, TEMPERATURE, STANDARDIZATION, ETC.

LUFKIN Steel Tapes are made to bench standards certified accurate by the United tates Department of Commerce, National Bureau of Standards, Washington, D. C.

The temperature standard for steel tapes is 68° Fahrenheit (equal to 20° centigrade). Official coefficient of expansion of steel tapes is 0.00000645 per degree Fahrenheit, 0.000116 per degree centigrade. This amounts to 0.000645 foot or 0.00774 inch per egree Fahrenheit on a 100 foot tape; on a 50 foot to just one-half, and on a 200 foot to ouble that distance per degree. The same coefficient may safely be used for our stainers steel tapes also. For illustration of length variation with temperature, see page 284.

Standard tension for steel tapes supported horizontally throughout entire length, n flat surfaces is 10 pounds (4.5 kilograms) for tapes from 25 to 100 feet or from 10 to 30 neters long. For tapes longer than 100 feet or 30 meters it is 20 pounds (9 kilos.).

Temperature and tension need be taken closely into account only on very precise work. We recommend Government test of tapes for such work or used as master tandards. Such tests are made for a nominal fee by the Government Laboratories.

7 978 979 9710971

Instantaneous Readings

Lufkin Steel Tapes have Instantaneous Readings, a great improvement in numbering as shown above. Briefly described, it is the last preceding foot number repeated teach inch or tenth throughout the tape, in small, yet easily read figures. This keeps he total reading directly before the eye, eliminates the chance of error in running each to the last foot, and saves time.

"Chrome Clad" Steel Tapes have jet black markings on satin chrome-white surface, asy to read.

"Nubian Finish" Steel Tapes have raised lines and figures in the natural steel over lead-black background.

As to accuracy there is no distinction, both the Chrome Clad and "Nubian" Tapes are recognized standard.

GRADUATIONS

We can furnish Tapes and Rules in a variety of graduations, including the Metric System.

REPAIRING STEEL TAPES

We promptly attend to any repairs on steel tapes and execute them in the most approved manner at moderate charge.

A complete catalog of Measuring Tapes and Rules will be gladly sent on request.





13652 Gr

NOTE:

LEN

1353 Gra

7354 Gra



CHROME GLAD STEEL TAPES



THE OUTSTANDING DEVELOPMENT IN THE MANUFACTURE OF MEASURING TAPES

Much of the story of Chrome Clad Tapes is told in these seven words: "EASY-TO-READ MARKINGS THAT ARE DURABLE"

They are the first Steel Tapes having markings that are both durable and easy to read, features of equal importance.

AMONG THEIR OTHER SUPERIOR QUALITIES ARE THESE:

Resist Rust.

Are Extra Strong.

Will Not Crack, Chip or Peel.

Cases and Frames of Improved Types.

Before being placed on the market, Chrome Clad Tapes were tested for many months under actual, severe conditions of use. Thus their ease of reading under various lights, their durability and other essential qualities were most thoroughly proven in advance.

Since then they have, in actual use by our customers, in all classes of work, abundantly justified all claims we make for them.





"Anchor" Chrome Clad

STEEL TAPES

(Patent Pending)



3/8 Inch Wide.

2651

2652

2653

2654

Leather Case.

"Anchor" Chrome Clad is an accurate Steel Tape, chrome plated, with jet black arkings and satin chrome-white surface, unusually free of glare.

"Anchor" is the type of Steel Tape suitable for all usual measuring work, with urable case, very nice to carry. This case is of finest, genuine leather, mahogany in olor, closely hand-stitched over a substantial, plated, steel liner. Folding flush handle opened by push pin. Tape has "Instantaneous" Readings; zero falls at outer end of ainless steel ring.

LENGTH IN FEET	25	50	100
	(C-210)	(C-213)	(C-216)
Graduated Feet, Inches and Eighth, EACH.	(C-210D)	(C-213D)	(C-216D)
Graduated Feet, Tenths and 100ths ft.,			

Note: "Anchor" Chrome Clad Tapes 1/2-inch wide can be furnished. Write for rices.

"ANCHOR JR." CHROME CLAD TAPES

Complete With Leather Case.

1/4 Inch Wide, Light Weight Line.



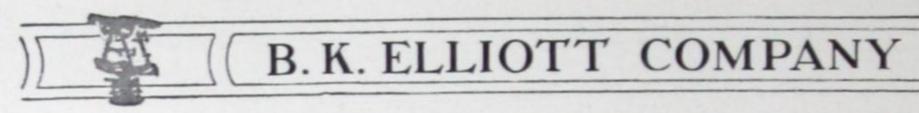
A counterpart of the "Anchor" Tape but smaller and of about one half its weight, hence nicest to carry. This quarter-inch line is somewhat thinner than 3/8 inch wide Chrome Clad Tapes. Case is of high grade, genuine leather, mahogany in color, closely hand-stitched over a substantial, plated, steel liner. Flush folding handle is opened by push pin. Tape has "Instantaneous" Readings; zero falls at outer end of stainless steel ring.

LENGTH IN FEET	25	50
	(C-1210)	(C-1213)
Graduated Feet, Inches and Eighths, EACH		
	(C-1210D)	(C-1213D)
Graduated Feet, Tenths and 100ths ft., EACH		

NOTE-Numbers shown in (-) are Lufkin numbers

See Price List Inside Back Cover

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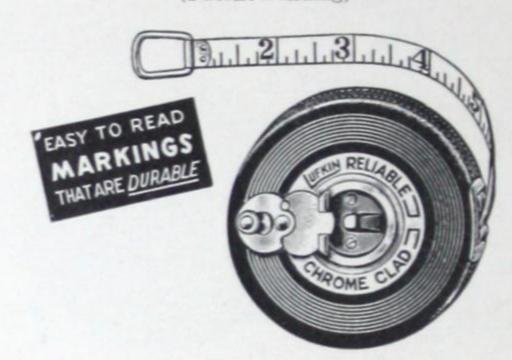




"Reliable" Chrome Clad

STEEL TAPES

(Patent Pending)



Leather Case.

38 Inch Wide.

Best of All Steel Tapes for General Uses

Case of superior, genuine leather, mahogany in color, closely hand-stitched over a substantial, plated, steel liner. Double folding flush winding handle has extension finger hold, and is opened by pressing on opposite side. Tape has "Instantaneous" Readings; zero falls at outer end of stainless steel ring.

	Length in Feet	25	50	100
		(C-200)	(C-203)	(C-206)
72661	Graduated Feet, Inches and Eighths,			
	Each	(C-200D)	(C-203D)	(C-206D)
72662	Graduated Feet, Tenths and 100ths ft.			
	Each			

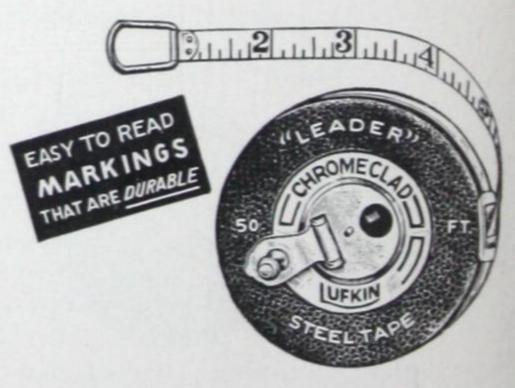
"LEADER" CHROME CLAD TAPES

The Popular Priced Chrome Clad Tape.

Accurate. Serviceable. Attractive.

3/8 Inch Wide.

"Leader" Chrome Clad is built for those who need a long Steel Tape that is accurate, easy to read and serviceable, yet moderate in price. The line is same weight and has the same superior features as our other 3/8 inch wide Chrome Clad Tapes. The case is a type that has proven very satisfactory, attractive and durable. It is of black, imitation leather, over a substantial, plated, steel liner. It has a 3/16 inch wide, flat, flush, nickel plated edge band and folding, flush handle opened by push pin. Tape has "Instantaneous" Readings. Zero falls at outer end of the standard pattern, stainless steel ring.



NOTE—Numbers shown in (—) are Lufkin numbers

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Engir The popular wend of the detachable line is read

No. 7 kather, cleansh hand

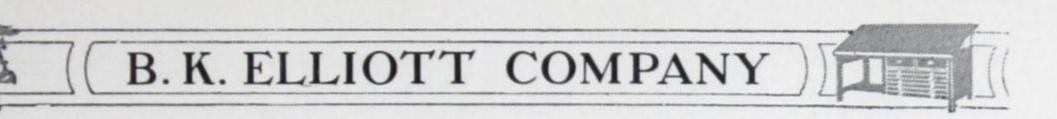
No. 7

73671 Gr

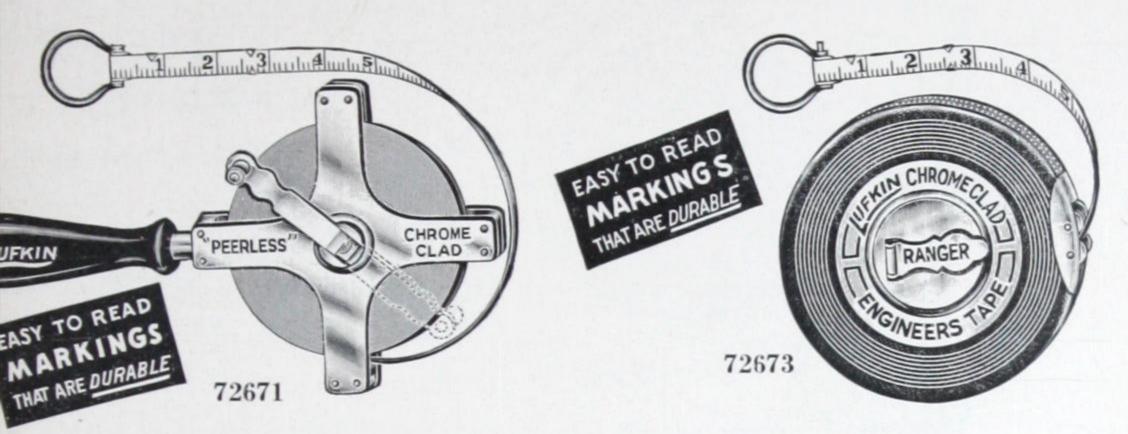
72672 Gr

73573 Gr

73574 Gr



ENGINEERS STEEL TAPES



5 1 24-6 1 24-7 1 24-8 1

Chrome Clad

1/4 Inch, Flexible, Sturdy Line.

Lock Handle Frame or Leather Case.

Engineer's Pattern Chrome Clad Tapes, on Lock Handle Frame or in Leather Case.

The line is ¼-inch wide, accurate, sturdy, flexible yet durable. It is the most opular weight, being heavier than the ¾-inch wide tapes. Zero falls at the extreme and of this tape and it has "Instantaneous" readings. The patented finger rings are

nd of this tape and it has "Instantaneous" readings. The patented finger rings are letachable and have a $3\frac{1}{2}$ -inch tape support, guarding against end breakage. The ine is readily removed from Reel or Case and often used thus with the two rings supplied.

No. 72671 has a substantial 4-arm pattern metal reel, with lock winding handle, which, when turned over, engages the frame arms, thus locking the line at any point. Frame is heavily nickel-plated, and has tape roller in each arm.

No. 72673 is furnished in a durable leather case of very finest appearance. Genuine eather, closely stitched over a substantial, plated steel liner with a roller throat. Folding lush handle is opened by pushing pin on opposite side.

100

50

LENGTH IN FEET.....

	"Peerless" Tape on Reel	(C-1273)	(C-1276)	
2671	Graduated Feet, Inches and 8ths, EACH	(C 1972D)	(C 1976D)	
2672	Graduated Feet, Tenths and 100ths foot, EACH	(C-1273D)	(C-1276D)	
	"Ranger" Tape in Case	(C-233)	(C-236)	
2673	Graduated Feet, Inches and 8ths, Each	(C-233D)	(C-236D)	
2674	Graduated Feet, Tenths and 100ths foot, EACH	(C-255D)	(C-230D)	

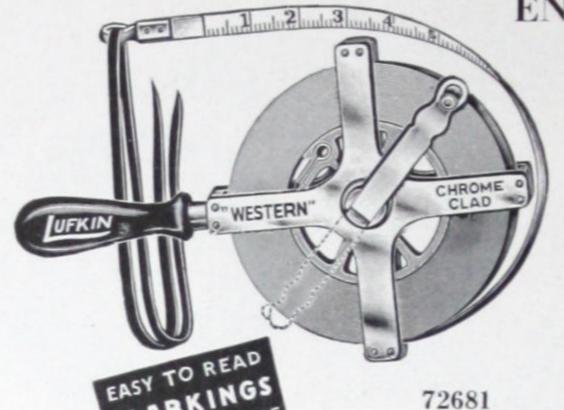
NOTE—Numbers shown in (—) are Lufkin numbers

See Price List Inside Back Cover

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ENGINEERS STEEL TAPES

1/4 INCH, EXTRA HEAVY LINE

LOCK HANDLE FRAME

"Western" Chrome Clad

An Extra Heavy, Chrome Clad, fully subdivided Tape. Chain Tape weight, with blank space each end and a heavy eye permanently attached to receive rawhide thongs. Two thongs are supplied. Tape can be readily removed from the sturdy Lock Handle Frame.

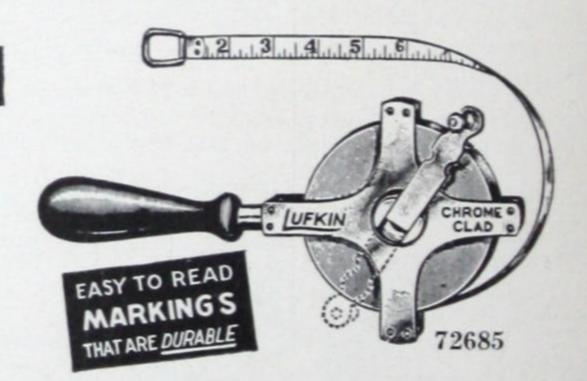
	"Western" Tape on Reel	100 FT.
72681	Graduated Feet, Inches and 8ths, Each	(C-1676)
72682	Graduated Feet, Tenths and 100ths foot, Each	(C-1676D)
	"Western" Tape Without Reel	(OC-1676)
72683	Graduated Feet, Inches and 8ths, Each	
72684	Graduated Feet, Tenths and 100ths foot, Each	(OC-1676D)

Chrome Clad

STEEL FRAME TAPES

3/8 Inch Wide

With Lock Handle



The same Chrome Clad line as furnished in Reliable and Anchor Tapes, but on a Lock Handle Frame. As tapes on reels do not readily clog with dirt and require the minimum of care, they are preferred for some types of work.

NOTE: This tape can also be supplied in ½-inch width.

NOTE—Numbers shown in (—) are Lufkin numbers

See Price List Inside Back Cover

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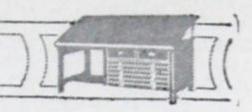
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13893 Gr

13694 Gra

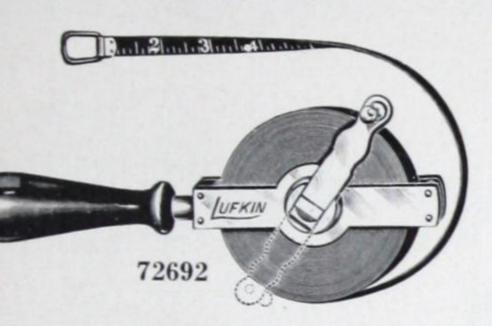




LOCK HANDLE FRAME STEEL TAPES

stantaneous Readings

"Nubian" Finish



Line of highest grade tape steel, clearly marked, with "Nubian" Finish and "Instantaneous" Readings. Ring attached. Substantial 2-arm metal frame. The lock handle is a long one-piece winding handle which, turned over, engages frame arms and locks the line at any point. It also gives extra leverage. Polished hardwood handle affords firm hold and is removable. Frame and its mountings heavily nickel plated.

With Three-Eighths-Inch Standard Pattern Steel Tapes On Folding Lock Handle Frame

LENGTH IN FEET	50	100
Graduated Feet, 10ths and 100ths	(1283D)	(1286D)
Graduated Feet, Inches and 8ths	(1283)	(1286)
an be furnished 1/2-inch wide with lock handle.	(Prices quoted or	application

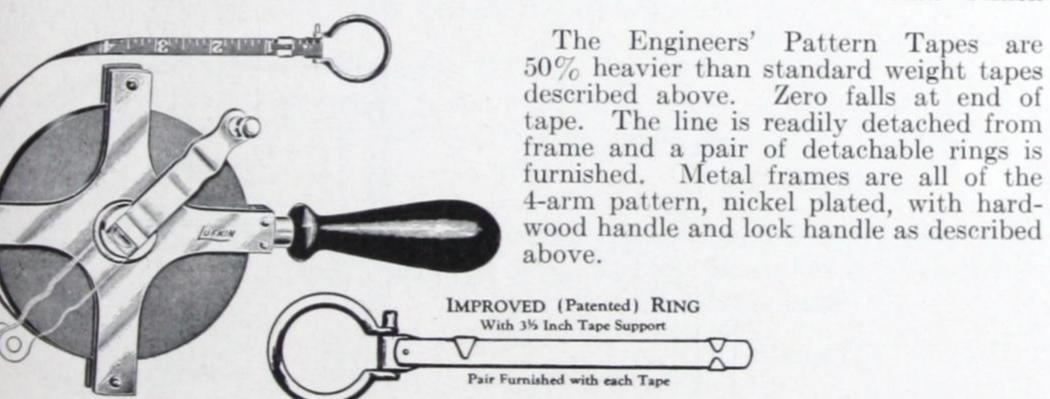
ENGINEERS' PATTERN FRAME STEEL TAPES

stantaneous Readings

691

692

"Nubian" Finish



(Tape Thickness—Approximately .012 Inch)

With Standard Weight Engineers' Pattern One-Quarter-Inch Tapes Zero falling at end of line. With detachable rings

LENGTH IN FEET	50	100	200
Graduated Feet, 10ths and 100ths Each	(1273D)	(1276D)	(1278D)
Graduated Feet, Inches and 8ths.Each	(1273)	(1276)	(1278)

NOTE—Numbers shown in (—) are Lufkin numbers

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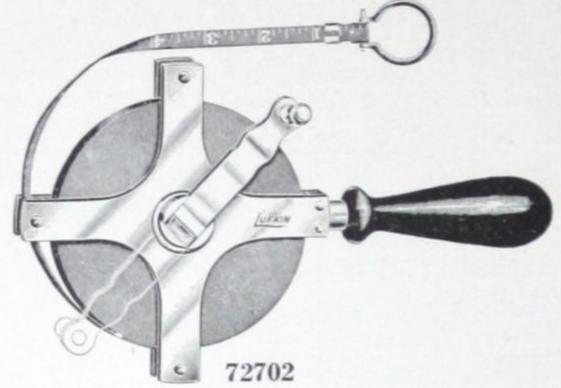


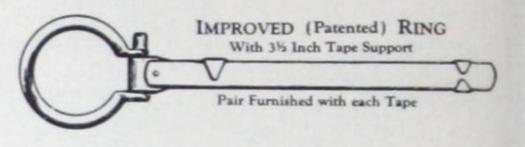
EXTRA WEIGHT FRAME STEEL TAPES

These "Extra Weight" Tapes are of weight midway between what we know as our "Standard Weight" and our "Heavy" Engineers' Lines. Therefore they are of good flexibility, yet extra sturdy, and are designed for engineering, surveying, construction, highway and other heavy work.

Instantaneous Readings

"Nubian" Finish





Thickness .015

With "Extra Weight" 1/4-Inch Wide Steel Lines. 25% Heavier than Standard Engineers' Pattern Tape

Length in Feet 50 (1273D-X) (1276D-X) (200 (1278D-X) (72701 Graduated Feet, 10ths and 100ths . Each (1273-X) (1276-X) (1278-X)

72702 Graduated Feet, Inches and 8ths...EACH

"WESTERN" TAPE

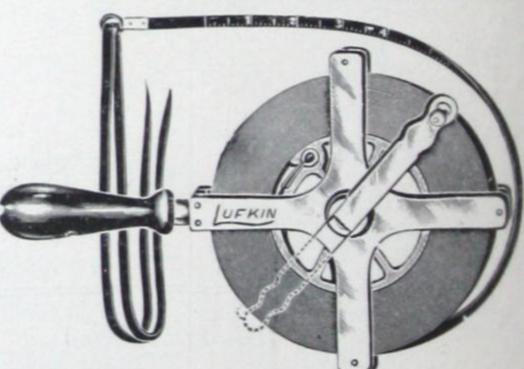
Instantaneous Readings

"Nubian" Finish

WITH HEAVY ONE-QUARTER-INCH STEEL TAPE

An Extra Heavy Engineering Tape, Graduated Entire Length to 10ths and 100ths of Feet

Thickness .020



This is a heavy duty tape for engineering and construction work, where extra durability and accuracy are desired.

The line is over 50% heavier than our standard weight Engineers' Pattern Tapes; is graduated to feet, 10ths and 100ths of feet, entire length and guaranteed accurate. Each end is fitted with heavy nickel-plated brass clip (eye), and has blank space. Line is easily removed from frame. Pair of leather thongs furnished with each tape.

The frame is substantial, four-arm pattern, of metal, nickel plated and has polished hardwood handle. It has Lock Winding Handle, which, turned over, engages the frame and holds the tape at any desired point. The long winding handle and knob and large drum shell give good grip, leverage and speed in winding.

WIDTH OF REEL, 75% INCHES (1276DXX)

72703 Complete with Lock Handle Reel, 100 feet...............EACH

NOTE—Numbers shown in (—) are Lufkin numbers See Price List Inside Back Cover

PAGE 270 Johnson

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72713 (1376 72714 (1376

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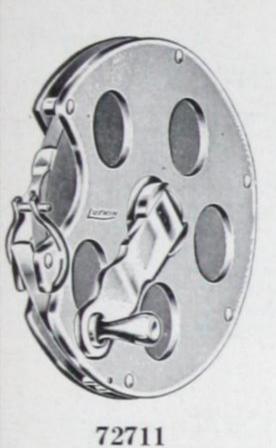


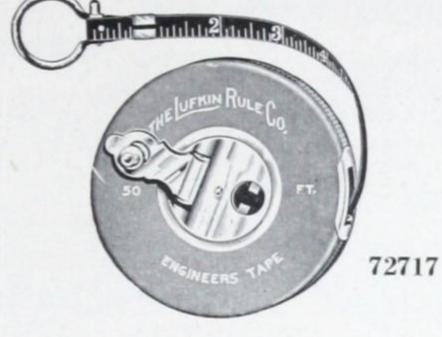
"WOLVERINE"

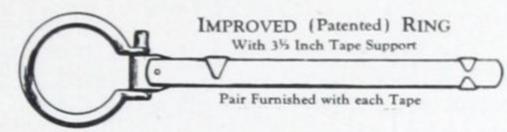
ENGINEERS' PATTERN

Instantaneous Readings

"Nubian" Finish







Both these tapes have Engineers' Pattern ¼-inch lines, with zero at end of line I furnished with pair of detachable rings. The line is easily removed from reel or e. This narrow, heavy line is preferred by many engineers, as it will stand harder ge than the ¾-inch lines.

The "Wolverine" Reel is of a durable, light weight, rust-proof metal. Its perated disk sides facilitate keeping line clean, and its cut-away sides allow locking ring on first end under a spring, preventing breakage. It has folding winding handle adjustable strap handle. Tape Thickness—Approximately .012 Inch

With Standard Weight Engineers' Pattern One-Quarter-Inch Steel Tapes

11	(1376D)	Graduated Feet,	10th and 100ths-100	feet	. EACH
			Inches and 8ths-100		

ENGINEERS' HEAVY STEEL TAPES ON "WOLVERINE" REEL

Tape Thickness—Approximately .020 Inch

13 (1376DXX) 14 (1376XX)	Graduated Feet, 10ths and 100ths—100 feet Each Graduated Feet, Inches and 8ths—100 feet Each
	Tape Lines Only, Without Reel, With Thongs
15 (01376DXX) 16 (01376XX)	Graduated Feet, 10ths and 100ths—100 feet EACH Graduated Feet, Inches and 8ths—100 feet EACH

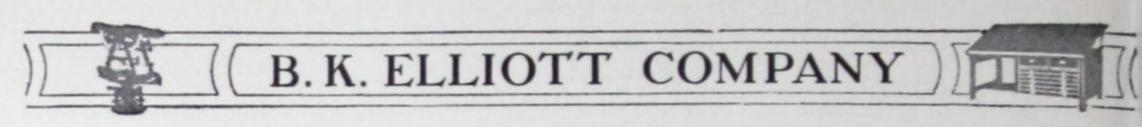
LEATHER CASE

HAND STITCHED FOLDING FLUSH HANDLE

With Standard Weight Engineers' Pattern One-Quarter-Inch Steel Tapes

See Price List Inside Back Cover

Some Page 271 Johnson



"RELIABLE" STEEL TAPES

Instantaneous Readings

"Nubian" Finish

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72732 Gr

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12733 Gra

12734 Gra

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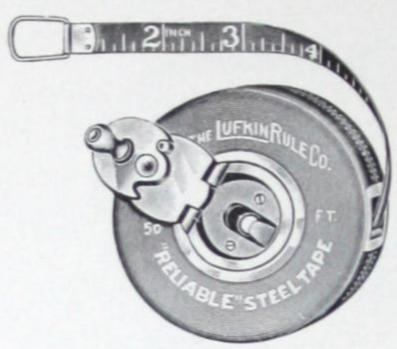
1736 Gra

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72722 - 72724



72726

The "Reliable" Tapes are the finest made. The lines are of the best quality tape steel. The cases of specially selected materials throughout, genuine leather, hand-stitched with heavily-plated steel liners. Double-folding flush handles opened by pressing on opposite side.

With Three-Eighths-Inch Steel Tapes

	LENGTH IN FEET DIAMETER OF CASE, INCHES		50 3 ³ / ₈	75 4½	100 4½
72721	Graduated Feet, 10ths and 100ths. Each	(200D)	(203D)	(205D)	(206D)
72722	Graduated Feet, Inches and 8thsEach	(200)	(203)	(205)	(206)
	With One-Half-Inch S	steel Tap	es		
	LENGTH IN FEET			50 3 ³ / ₈	$\frac{100}{4\frac{1}{2}}$
72723	Graduated Feet, 10ths and 100ths	EAC	Н	(303D)	(306D)
72724	Graduated Feet, Inches and 8ths	EAC	Н	(303)	(306)

"RELIABLE JUNIOR" STEEL TAPES

A miniature "Reliable" Tape. This, while a ¼-inch wide, light-weight tape, will give good service. It is about half the size and weight of the 3/8-inch "Reliable."

With One-Quarter-Inch Steel Tapes

	Length in Feet	50 23/8
72725	Graduated Feet, 10ths and 100ths	(103D)
72726	Graduated Feet, Inches and 16ths	(103)

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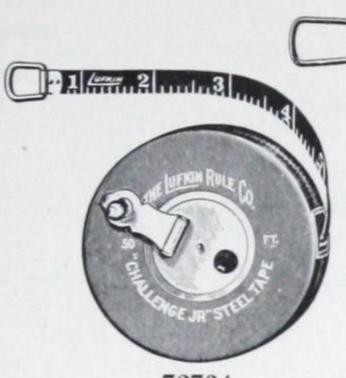


"CHALLENGE" AND "CHALLENGE JUNIOR" STEEL TAPES

Instantaneous Readings

"Nubian" Finish







72732 72734

72736

"Challenge" Tapes have genuine leather, hand-stitched cases with plated metal ers. Folding flush handle opened by pressing pin on opposite side.

With	Three	-Eighths	-Inch	Steel	Tapes
------	-------	----------	-------	-------	-------

LENGTH IN FEET	. 25	50	100
DIAMETER OF CASE, INCHES	. 27/8	33/8	41/2
	(260D)	(263D)	(266D)
Graduated Foot 10ths and 100ths	**		-

731 Graduated Feet, 10ths and 100ths..........EACH

"Challenge Junior" Tapes are similar to the "Challenge," only about half its size d weight.

With One-Quarter-Inch Steel Tapes

LENGTH IN FEET	25	50
DIAMETER OF CASE, INCHES	\dots $2\frac{1}{2}$	27/8
	(1260D)	(1263D)
Craduated Fact 10ths and 100ths	T7.	

STAINLESS STEEL TAPES

Rust Proof

("Challenge" Pattern)

Non-Corrosive

(1263)

These are standard weight lines of Stainless Steel, rust-proof and non-corrosive, with ses identical with the "Challenge." Only Genuine Stainless Steel of the particular alysis found best for measuring tapes is used. In temper it approaches standard pe steel. It holds its shape, and hence its accuracy, better than other rust-proof matells such as phosphor bronze and monel metal.

The lines are clearly marked and have "Instantaneous" Readings and "Nubian" nish. The cases are of brown, selected, genuine leather, closely hand-stitched, and have bstantial plated steel liners. Folding flush handle is opened by pressing pin on opposite le. Mountings nickel plated. Measurements guaranteed accurate.

With Three-Eighths-Inch Stainless Steel Tape

Length in Feet	90	100
(S260D)	(S263D)	(S266D)

735 Graduated Feet, 10ths and 100ths.... Each (S260) (S263) (S266)

NOTE: We can also supply our 3/8 and 1/2-inch "Reliable" and Frame Tapes in ainless Steel.

NOTE-Numbers shown in (-) are Lufkin numbers

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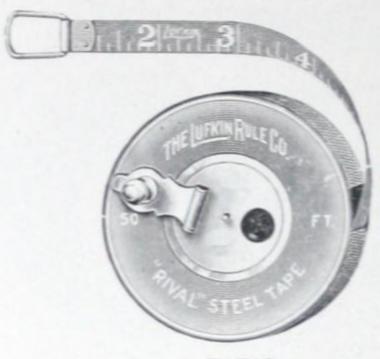




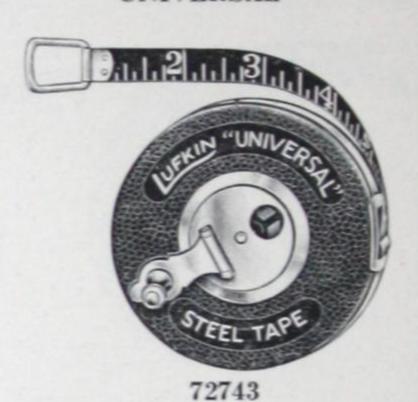
STEEL TAPES

Instantaneous Readings "RIVAL"

"Nubian" Finish
"UNIVERSAL"







"Rival" Tapes have nickel plated steel cases with knurled edges. Folding flush handle opened by pressing pin on opposite side.

	With Three-Eighths-Inch Steel Length in feet Diameter of case, inches	. 25	50 31/4	100 4½
72741	Graduated Feet, 10ths and 100ths, each	(240D)	(243D)	(246D)
72742	Graduated Feet, Inches and 8ths, each	(240)	(243)	(246)

"Universal" Tapes have metal-lined cases, covered with black "Keratol" with \(\frac{3}{16}\)-inch wide, flat, flush, nickel-plated edge band. Folding flush handle.

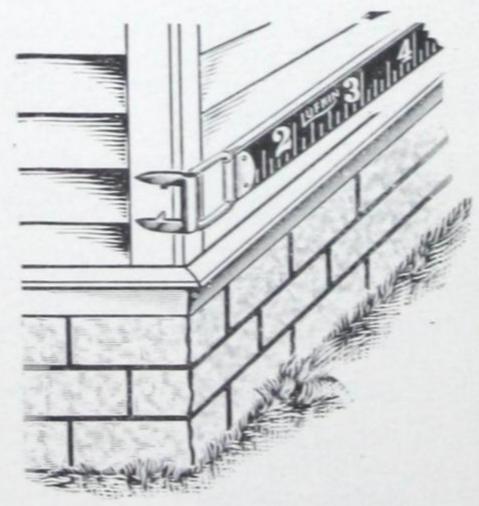
With Three-Eighths-Inch Steel Tape

Length in Feet	25	50	100
	(540)	(543)	(546)
Graduated Feet Inches and 8ths	EACH		

72743 Graduated Feet, Inches and 8ths..... EACH

HOOK-RING ON 3/8-INCH STEEL TAPES

NOT DETACHABLE





Position of Hook When Not in Use

Any \(^3\)s-inch wide steel tapes can be supplied with this riveted-on Hook-Ring. Zero falls at inside of open hook. This steel hook has two prongs, each with anchor spur. It takes a firm, square hold, yet releases itself. It folds and holds itself flat and thus measurements can be taken without hook and then also it will not catch objects or prevent winding line completely into case. Tapes with Hook-Ring should be ordered as "H-203 Reliable," "H-263 Challenge," etc.

72744 Hook-Ring on 3/8-inch Steel Tapes

NOTE-Numbers shown in (-) are Lufkin numbers

See Price List Inside Back Cover

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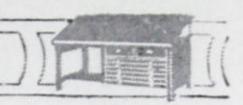
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Instantaneous

Keadings

B. K. ELLIOTT COMPANY



"CHALLENGE" TREE TAPES

THE WENUNRULE (TO)

72751

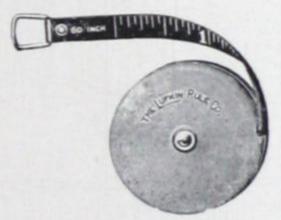
"Nubian" Finish

Give at Direct Reading Diameter as Well as Circumference of the Tree

Used by the United States Forest Service, as well as by private foresters, and in ager schools, etc. Three-eighths inch wide highest grade steel line in "Nubian" Finish, arked on front side standard feet, 10ths and 100ths of feet, "Instantaneous" Readings; her side diameter equivalents of circumferences in diameter feet, inches and 10ths of hes. First end has blank space and is fitted with tree peg or spike, which folds down convenience in carrying. Case same as the "Challenge," of brown, selected, genuine ther, with plated steel liner and with folding flush handle opened by push pin.

Graduated feet, 10ths and 100ths one side; other side diameter reading in feet, inches and 10ths of inches. each.....

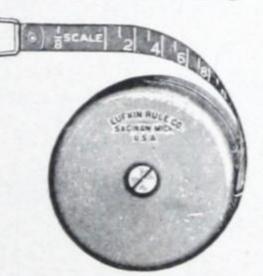
SPRING WIND POCKET STEEL TAPES



752

72752 - 72753

"Nubian" Finish



72755 - 72756

Nickel-plated brass cases, spring wind, center stop With One-Quarter-Inch Steel Tapes

Graduated one side, Inches and 16ths, other (143D) (145D) (146D) (148D) side Feet, 10ths and 100ths, each......

Graduated one side, Inches and 16ths, (143EM) (145EM) (146EM) (148EM) millimetres other side, each.....

With Architects' Scales

NOTE-Numbers shown in (-) are Lufkin numbers

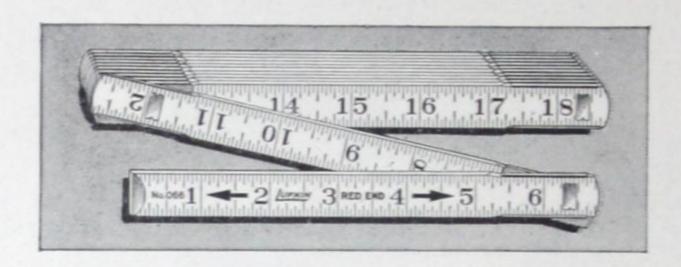
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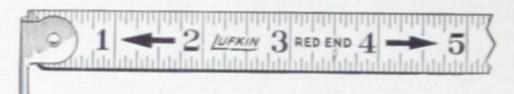
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"RED END" RULES





9 1 -2 LUFKIN 3 RED END 4 -> 5

Hook Open

Hook Closed

Highest grade Spring Joint Rules on the market; of superior quality and finish, and most striking appearance.

Sections of selected hardwood. Joints of solid brass, firm, smooth working, rust proof. The rules also have brass strike plates on each section, preventing wear on markings in opening and closing.

All "Red End" Rules have a special high gloss enamel finish, durable, crack and chip proof. The snow white and the cream-enameled rules have a thoroughly well finished appearance. All ends are gloss red, attracting notice and setting off the rules from all common types.

We list these rules below with and without Folding End Hook. The hook is just the thing for taking measurements out of arms reach. It is of metal and will fold and hold out of the way when not wanted. Zero falls at inside of hook when hook is open, at extreme end of rule when hook is folded up.

Marked Consecutive Inches to 16ths, Both Edges of Both Sides Without Hook

W	hite Enameled		Cream Ena	meled
72762	5 ft	72765		PER Doz.
72767	6 ft Еасн	With Folding Ho PER DOZ. 72768	FACH	PER Doz.
		CD CAID D		

"RED END" RULES (ENGINEERS GRADUATIONS)

Flexible
Six-Inch
Folds

5/8 Inch Wide

Solid Brass Trimmings

> Patented Lock Joints

Meet the demand for a Superior 6-foot Wood Rule in Engineers Graduation

Marked Feet, 10ths and 100ths of Feet on Inside;
Feet, Inches and 16ths on Outside
Instantaneous Readings (foot numbers in red, repeated each 10th and each inch)

72769 "Red End" 6 ft. White Enameled

...

EACH

See Price List Inside Back Cover

Particulating in a opening vindow forms an neasurem to take folding revery pur

The rule is fit graduated obtain ins points to Add meas you exact

rule in or

Rules the black sides of ea lock joints

Six-Inch F

0 1

These dape well, ints are conductions

12773 6 f

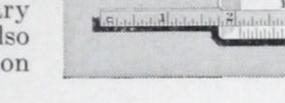
12775 4 fr 12776 6 f



14 15 16 17 18

FOLDING EXTENSION RULES

articularly designed for ng inside measurements penings, such as door and dow frames, building ns and all such inside surements as are difficult take with the ordinary ing rule. Serves also ry purpose of a common in ordinary work.



The first section of the is fitted with a six-inch

duated brass slide which cannot fall out as it is securely locked at both ends. To ain inside measurements, open rule to within six inches or less of distance between its to be measured. Extend brass slide by push button to point of measurement. I measurement on brass slide to that shown at extreme end of rule, which will give exact distance between points.

Rules made of selected hardwood in boxwood finish, a uniform, light color, making black markings easy to read. Equipped with strike plates (small brass plate both es of each section), which prevent wear on markings in opening and closing. Have is joints which reduce end play, so maintain accuracy. Ends brass capped.

Rule Marked Consecutive Inches to 16ths, Both Sides Brass Extension Slide Marked Inches to 16ths

All Sections of extra weight, 1/8-inch thick

Extra Rigid . . . Especially desirable in measuring openings.

Extra Durable . . . Valuable in any type of work.

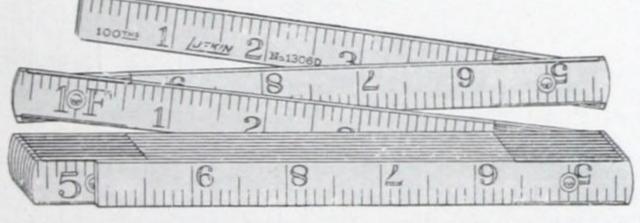
EACH PER DOZ.

71 6 foot Extension Rule . . .

72 6 foot Extension Rule with folding hook.....

ALUMINUM RULES

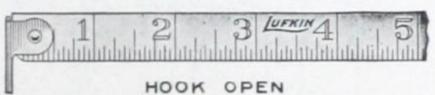
-Inch Folds



9/16 Inch Wide



HOOK CLOSED



These Aluminum Rules, being of a special hardness, are durable and hold their pe well. Having solid brass joints, they are rust-proof throughout. The spring ats are of the rivet type. The surface of the rule is in natural color, with sunken duations and figures in black, showing up distinctly.

> Marked Feet, 10ths and 100ths of Feet, One Side; Feet, Inches and 16ths Other Side

Without Hook

PER Doz. EACH

With Folding Hook

PER Doz. EACH

72774 6 ft.....

Marked Consecutive Inches to 16ths, Both Sides

Without Hook

With Folding Hook

EACH PER DOZ.

PER Doz. EACH

4 ft..... 776 6 ft.....

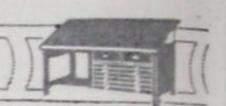
6 ft.....

72777 6 ft.....

See Price List Inside Back Cover

common Page 277 Porcono



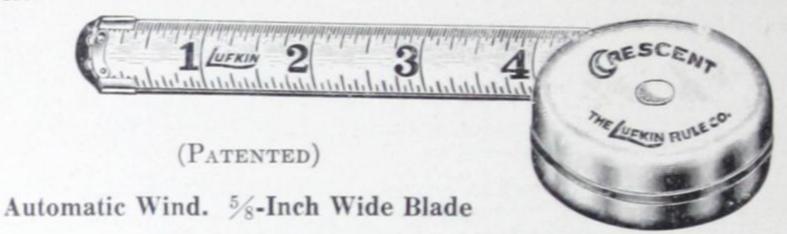


TAPE RULES

Marked One Side Only

Steel blade is stiffened by concave forming, so it can be projected unsupported, like a rule, to walls, ceilings, or into openings. Yet it will also flex to accurately measure circles and odd shapes. Blade is nickel plated and markings are prominent and dark in sharp contrast, hence easy to read.

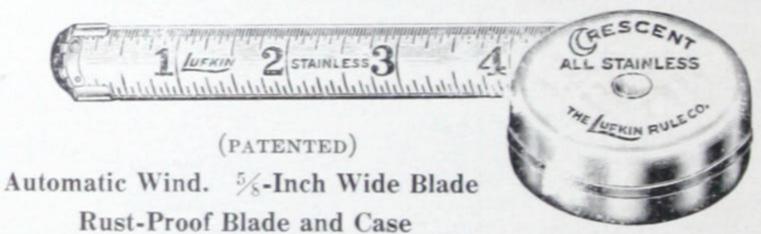
Sliding end hook (patented) is one of the distinctive features of the "Crescent." This hook automatically adjusts itself to accurately take either butt end or hook measurement. Hook pushed back serves as a gage, indicating and holding the measurement. With hook pushed back, blade may be inserted in a narrower opening than hook would enter.



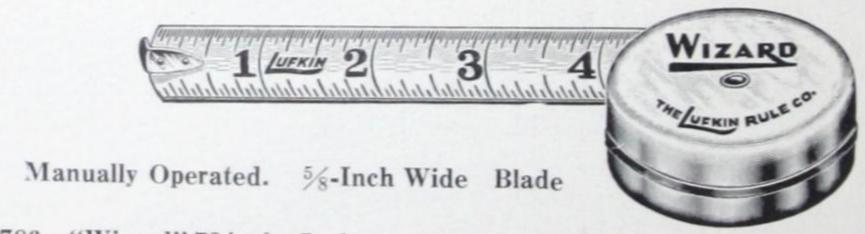
72781 Crescent, 72 inch—Inches to 16ths, both edges. (First 6 inches upper edge to 32nds)... 72782 Crescent, 6 foot—Feet, 10ths and 100ths of feet upper edge. Feet, inches and 16ths lower edge... 72783 Crescent, 78¾ inch—Millimeters on upper edge.

"ALL STAINLESS" CRESCENT

(2 meters) Inches to 16ths lower edge.....



72784	Crescent Stainless, 72 inch—Inches to 16ths, both edges.	EACH
72785	(First 6 inches upper edge to 32nds)	
	Feet, inches and 16ths on lower edge	



	anually Operated. %8-Inch wide Blade
72786	"Wizard" 72 inch - Inches to 16ths, both edges
	"Wizard" 96 inch - Inches to 16ths, both edges
	"Wizard" 120 inch - Inches to 16ths, both edges
	(First 6 inches upper edge to 32nds) "Wizard" 6 foot - Feet, 10ths and 100ths of feet upper edge.
	Feet, Inches and 16ths lower edge

See Price List Inside Back Cover

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2791

2792 A

1

72794

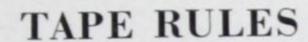
To ta Butt squar Extend th Add 2 inc

This instr 72796 M

illustr

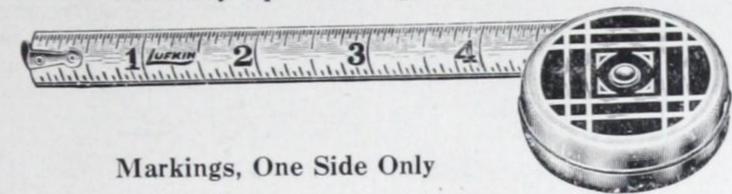
72797 M





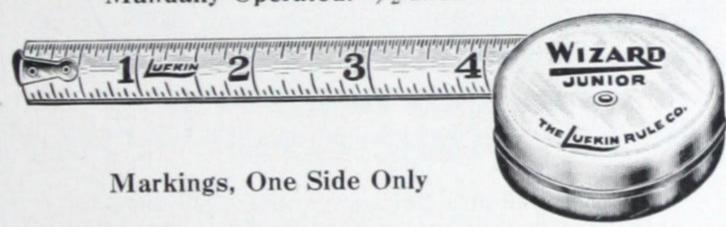
"ARISTOCRAT"

Manually Operated. 7 Inch Wide Blade



"WIZARD" JUNIOR

Manually Operated. 1/2 Inch Wide Blade



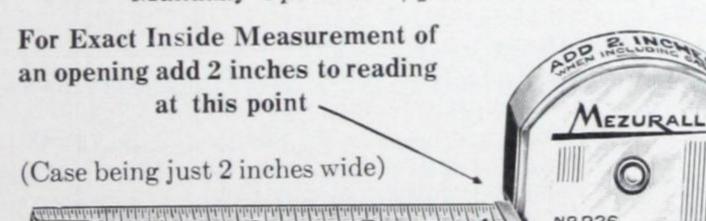
Wizard, Jr., 72 inch—Inches to 16ths, both edges.

First 6 inches upper edge to 32nds......

795 Wizard, Jr., 96 inch—Inches to 16ths, both edges. First 6 inches upper edge to 32nds.....

"MEZURALL"

Manually Operated. 1/2 Inch Wide Blade



To take an inside measurement:

att square back edge of case against one side of opening being measured.

stend the blade to the other limit.

ld 2 inches to the reading clearly indicated at the square opening of the case, as illustrated (case being 2 inches wide).

his instruction is clearly stamped on the case itself.)

796 Mezurall, 72 inch—Blade marked one side, both edges, inches to 16ths. Each (First 6 inches upper edge to 32nds).....

Mezurall, 72 inch—Blade marked both sides, both edges, inches to 16ths. (First 6 inches upper edges to 32nds).....

See Price List Inside Back Cover

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TAPE HOOKS AND CLAMP HANDLES

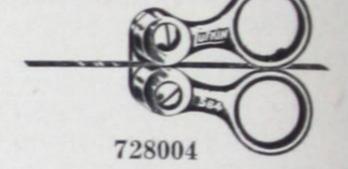
728003

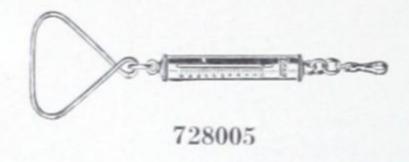
Tape hooks are easily attached to our steel tapes with standard end ring. When attached to tapes measuring from end of ring zero falls at inside of hook.

		LAC
728001	Tape Hook for ½-inch tapes	
728002	Tape Hook for 3/8-inch tapes	
720002	Tape Hook for /8-men capes	
728003	Tape Hook for 1/4-inch tapes	

CLAMP HANDLES

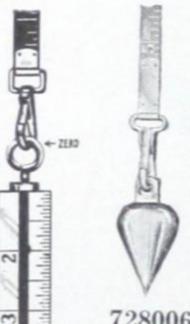
For gripping a steel tape at any point so tension can be readily applied and held. Made of brass, nickel plated. Properly used will not damage tape in any way.





TENSION HANDLE

For applying and determining the exact tension applied to any tape. Used on steel tapes in precise work to insure uniformity of results. Made of brass, nickel plated. Readings to one-half pounds



PLUMB BOBS FOR STEEL TAPES

These Plumb Bobs are extensively used for tank gaging. (Tapes used with them are cut to include bob in measurement, i. e., so zero falls at lower end of bob.)

728006 is a 6-ounce, solid brass bob, cone shaped; a weight suitable for the lighter oils,

gasoline, etc.

728007 is a 14-ounce, enameled iron bob, 3legged, and is interchangeable with 728006, being same length.

728008 is a 20-ounce, solid brass bob, round, with tapered point, and will penetrate heavy oils, etc.

728009 is exactly same as 728008 except graduated inches to 8ths, reading upward, i.e., zero falling at lower end of point.

728010 and 728011 are brass bobs, identical with 728006 and 728008, except having removable tip (screw tip) made of "Ampco" metal. "Ampco" is similar to brass but harder.



728008

728006 Plumb Bob. 6 ounces 728007 Plumb Bob. 14 ounces 728008 Plumb Bob. 20 ounces 728009 Plumb Bob. 20 ounces 728010 Plumb Bob. 6 ounces 728011 Plumb Bob. 20 ounces 728011 Plumb Bob. 20 ounces	23/8 inch 23/8 inch 63/4 inch 63/4 inch 23/6 inch	DIAMETER 1 1/4 inch 2 3/8 inch 1 inch 1 inch 1 inch 1 inch 1 inch	EACE
---	---	--	------

OUTAGE PLUMB BOB

Designed for determining tank outage rather than contents. Outage gaging is most common for ship tanks and related work.

Bob No. 728012 is of solid brass, 3/4 inch square. It has inserted black strip in dull finish. holding and making oil line most readable. It is graduated to 16ths inch, with inches numbered from top to bottom, zero point falling at inside of top of eye. (Tapes used with this bob have zero falling at inside of outer end of snap; hence adding oil line measurement on bob to tape reading, gives total outage.)

WT. EACH LENGTH DIAMETER EACH 728012 Outage Plumb Bob......16 ounces 3/4 inch, square 7 inch

See Price List Inside Back Cover PAGE 280 minus

LENGTH, N Marked or Warked bo 12812 3 For Serie LENGTH, F

12811

LENGTH, F

INCTH. N Warked on Marked bo 12813 3 For Serie INCTH FE

LINGTH, M. Marked one Marked bot

Are

12814 F ENGTH, FE ENSTH, MI

Marked one

2815 Fc ESSTE, FE INSTE, ME larked one

larked both

2816 Fo ESSTE, FEI BUTH, ME larked one Erted both

207 Impr

213 Tape 319 Rawh



STEEL TAPE REFILLS

1/4 Inch Wide, Light Weight "Junior" Refills

						_
1	For	"Reliable	Ir "	and	"Challenge	Ir "
	A UL	recitable	ar.	wille	Chancie	di.

H, FEET	25	33	50
H, METERS		10	15
d one sideEACH			
d both sides			

2 1/4 by .012 Engineers "Standard Weight" Refills. (With detachable rings)

Series 233, 1373, 273 and 1273, also D and ME.

гн, Fеет	50			100	150	164	200	300
TH, METERS	15	20	25	30		50		
ed one sideEACH								
ed both sidesEACH								

3 ½ by .015 Inch Engineers "Extra Weight" Refills. (With detachable rings) Series 233-X, 1373-X and 1273-X, also D and ME.

TH FEET	50	100
TH, METERS	15	30
ed one side		
ed both sides		

1/4 by .020 Inch Engineers "Heavy" Refills or Lines Only Are Listed on pages 268, 270 and 271 with corresponding tapes complete

2/T 1 W11 C/ 1 m D CH

3/8 Inch Wide Steel Tape Refills 4 For Series 200 "Reliable," 260 "Challenge," 283 and 1283 Frame Tapes, also

D and ME
TH, FEET...... 15 25 33 50 66 75 82 100 150 164 200

In, PEEL	10	20	00	30	00	10	04	100	190	104	200
TH, METERS	5	71/2	10	15	20	22	25	30		50	
ed one sideEACH											
ed both sides EACH											

1/2 Inch Wide Steel Tape Refills

For Series 300 "Reliable," 360 "Challenge," 1293 Frame Tapes, also D and ME.

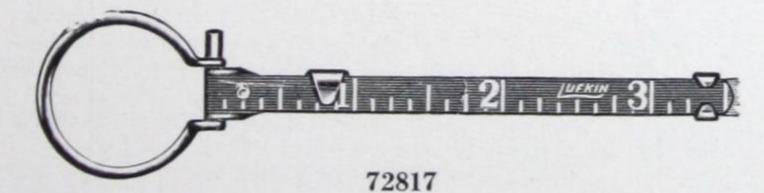
тн, Fеет	25	33	50	66	75	82	100	150	164
TH, METERS	71/2	10	15	20	22	25	30		50
ed one sideEACH									
ed both sidesEACH									

3/8 Inch Wide Stainless Steel Tape Refills

6 For Series S-260, also D and ME, and same stainless tapes of other series.

тн, Fеет	25	50	75	82	100
TH, METERS	71/2	15		25	30
ed one sideEACH					
ed both sidesEACH					

TAPE ACCESSORIES



Improved Detachable Ring for ¼ inch Engineers Pattern Tapes, having a flexible 3½° extension which prevents sharp kinks and breaks
Tape Finger, for attaching Engineers Pattern Tapes to inner drum
Rawhide Thongs

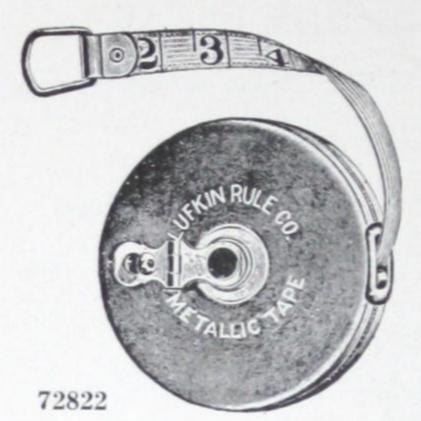
See Price List Inside Back Cover

Some Page 281 Johnson



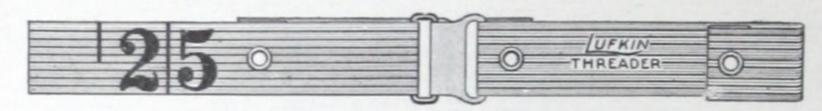


METALLIC TAPES



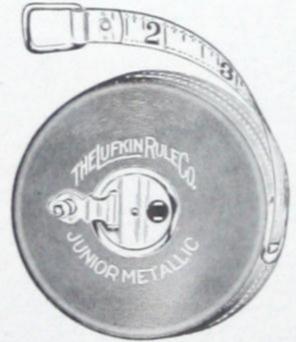
Highest Grade Woven Tape

Lufkin Improved Metallic Tapes of best woven linen with metallic warp. It has leather reinforcements first end. These tapes are woven, coated and marked by the most approved methods to insure satisfactory service. The cases are of genuine leather, handstitched with metal liner. Patent threader, shown below, makes removal of old line and attaching of new line simple.



With Five-Eighths-Inch Metallic Tapes With Folding Handle

	Length in Feet	25	50	100
79991		00D)	(503D)	(506D)
72821	Marked Feet and 10ths, half tenths ft Each	500)	(503)	(506)
72822	Marked Feet and Inches, half inches EACH	000)	(000)	(300)
	Lufkin Metallic Tapes 5/8 Inches Wide W	Vithout	Cases	
	Length in Feet		50	100
72823	Marked Feet and 10ths, half tenths ft. Each (0500I))	(0503D)	(0506D)
12020	(050)	0)	(0503)	(0506)
72824	Marked Feet and Inches, half inches EACH		(5555)	(0000)



"JUNIOR METALLIC" TAPE

The "Junior Metallic" is about half the size and weight of our \(^{5}\end{array}\)-inch Metallic Tapes. Case has folding flush handle opened by pressing pin on opposite side. Same general description as \(^{5}\end{array}\)-inch lines.

O JUN	With Seven-Sixteenths-Inch Metallic Tape Length in Feet	50 3 ³ / ₄
	72826	
72825	Marked Feet and 10ths, 100ths ft	(663D)
	Marked Feet and Inches, eighths	(663)
72827	Marked Feet and 10ths, 100ths ft	(0663D)
72828	Marked Feet and Inches, eighths	(0663)

MAGE 282 Johnson

See Price List Inside Back Cover

"ST

Telephone odinary smilar to it has less markings.

A hig

1831 M

72833 Ma 72834 Ma

60

TNIVI

An inex lary fair of lara dural lasched lin last case

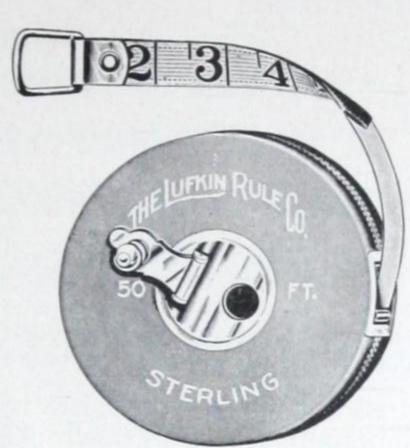
od brass od mountin

337 Grad



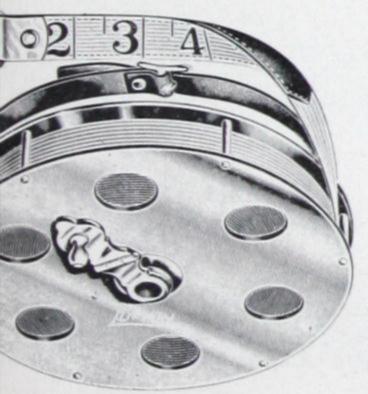
STERLING" Woven TAPES

high grade tape especially popular with phone, Power and Light Companies, etc., for lary work. The line, in general appearance ar to the Metallic, is without the metallic warp. as leather reinforcement first end and distinct lings. Genuine leather case, metal lined, with log flush handle.



With Five-Eighths-Inch Linen Tapes

	LENGTH IN FEET	50	100
L	Marked Feet and 10ths Each	(403D)	(406D)
2	Marked Feet, Inches and Half Inches	(403)	(406)
3	Marked Feet and 10ths Each	(0403D)	(0406D)
l	Marked Feet, Inches and Half Inches Each	(0403)	(0406)



WOVEN TAPE ON METAL REEL

Length: 150 feet, i.e., Standard Pole Section

Linen line, non-metallic, 5/8" wide same as our popular "Sterling." This tape is extensively used by public utility companies.

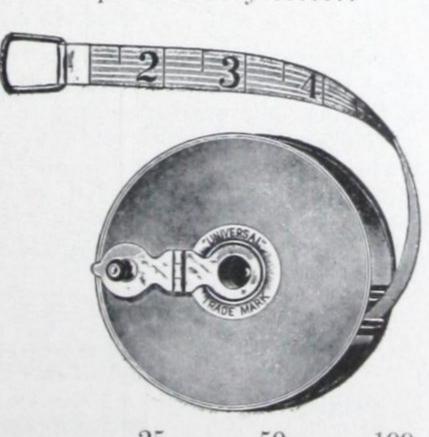
Substantial perforated disk reel of metal, with strong, folding winding handle giving good leverage, and adjustable strap handle affording firm hold. Diameter of reel 6¾ inches.

With Five-Eighths-Inch Linen Tapes

MARKED FEET AND INCHES EACH
72835 (1407) 150 ft. Tape Complete with Reel
72836 (01407)150 ft. Tape Line Only......

NIVERSAL" (Linen Corded) TAPES

In inexpensive, yet strong, tape. Affording fair degree of accuracy for a woven line. durable Line, ½" wide, corded with unded linen and well coated in yellow. Sheet case with sides maroon enameled, and brass edge band. Brass folding handle countings.



LENGTH IN FEET....

25 50 100 (730) (733) (736)

Graduated Feet, Inches and Quarter-Inches, Each

NOTE-Numbers shown in (-) are Lufkin numbers

See Price List Inside Back Cover

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GRADUATING AND NUMBERING

"HI-WAY," "PIONEER" AND "CANYON" TAPES

("Michigan" (Babbitt) Tapes are same except their finest subdivisions 10ths of feet)

"REGULAR"—Blank space at each end; first and last foot subdivided to 10ths and 100ths; balance graduated every foot. Supplied unless "A" or "B" is specified.

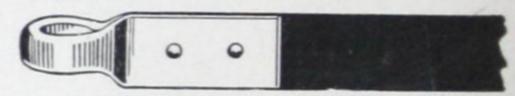
"STYLE A"—Measurement begins and ends at extreme outer ends of clips (rings); first and last foot subdivided to 10ths and 100ths; balance graduated every foot.

"STYLE B"—Blank space at each end; extra foot before zero subdivided to 10ths and 100ths numbered from right to left; balance graduated every foot except last foot in 100ths.



Half Railroad Gage Mark

Regularly put on all "Hi-Way" Tapes; optional at no extra charge on "Pioneer" and "Michigan" Tapes. This mark appears at 2 feet, 4½ inches from zero. This locates center of standard gage track when zero of tape is placed at inside edge of track.



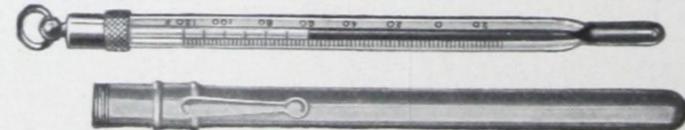
Chain Tape Clips (End Rings)

Of heavy brass, nickel plated. Will not wear thongs nor flatten out. Clips as above shown are securely riveted to both ends of all Lufkin Chain Tapes.

TEMPERATURE SCALE

Scale in Actual Length for 100 Foot Tape

POCKET THERMOMETER



Pocket Thermometer, 5 inch, Mercurial, Fahrenheit, Opal Glass, Reading to 2 degrees from—30° to +120°, in nickel case with ring..... Each

See Price List Inside Back Cover

PAGE 284 Johnson

A heavy rear and tear bright portion easy to read a remain clear e

Extra Stur

"Hi-Way and clips. Pa metal reel in long, folding v and spike end

Tapes, 3 100ths, measu

LENGT 72851 Comp

72852 Tape Meass

LENG'

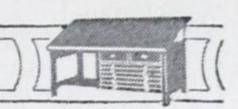
72853 Comp

72854 Tape

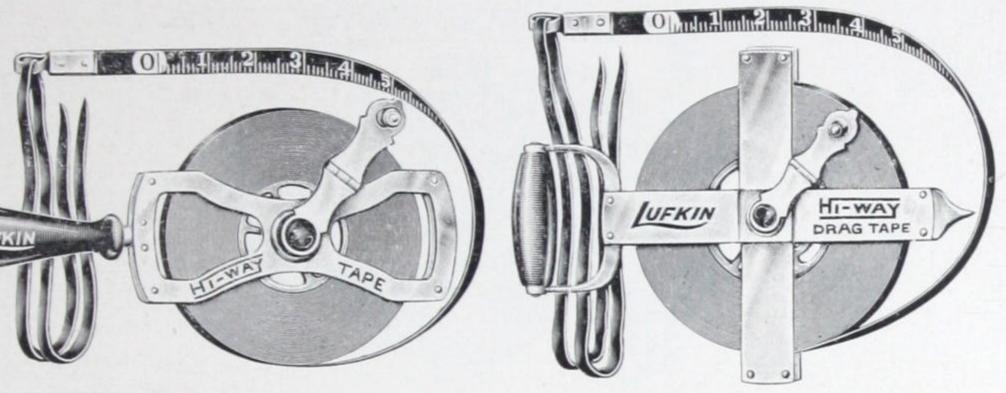
Tapes wit

at no extra co

NOTE: "



"HI-WAY" DRAG TAPES



extra Sturdy and Designed Especially for Highway, Railroad and Similar Work

415

Actual Size of Tape

A heavy Chain Tape of special tough steel and with extraordinary resistance to and tear. Has "Nubian" Finish. Prominent black lines and figures deeply cut into ht portions of the line which are in high relief, therefore markings most permanent, to read and to locate even by touch. Outwears all other Chain Tapes, and markings ain clear even after much dragging of the tape.

"Hi-Way" Tapes have ½ railroad gage mark at 2′ 4¼" from zero. Heavy brass clips. Pair of leather thongs with each tape. Line detachable from reel. Sturdy al reel in dull nickel plated finish, with polished hardwood handle, large drum, and folding winding handle. Tapes over 100 feet long have 4-arm reel with "D" handle spike end.

Tapes, $\frac{5}{16}$ inches wide, .025 inches thick, graduated every foot, with end feet to the theorem the same of t

	LENGTH IN FEET	200 (9200)	300 (9300)
51	Complete with reel EACH		
	(09100)	(09200)	(09300)
52	Tape onlyEACH		
	Measurement beginning at outside end of rings. Length in Feet	200 (9200A)	300 (9300A)
53	Complete with reel EACH		
54	Tape only	(09200A)	(09300A)

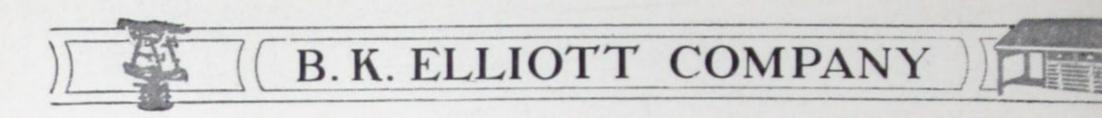
Tapes with extra foot before zero in 100ths, numbered right to left, can be furnished to extra cost.

Note: "Hi-way" Tapes, with end feet to inches, no extra cost.

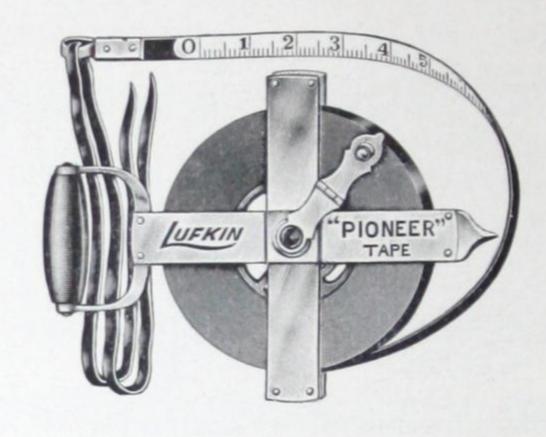
NOTE-Numbers shown in (-) are Lufkin numbers

See Price List Inside Back Cover

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"PIONEER" CHAIN TAPES





72862 — Actual Size of Tape

A sturdy steel tape affording a fine degree of accuracy. It has "Nubian" Finish, and black lines and figures cut into raised bright portions of the line, legible and permanent. Heavy brass end clips. Pair of leather thongs with each tape. Polished hardwood reel with long, folding winding handle and large drum. Mountings nickel plated. Line detachable from reel.

Width: 1/4 Inch. Approximate Thickness: .020 Inch. Etched Markings.

Graduated every foot with end feet in 100ths. Blank space each end.

LENGTH IN FEET..... 300 200 500 (5100)(5200)(5300)(5500)Complete with reel..... Each (05100)(05200)(05300)(05500)Measurement beginning at outside end of rings. LENGTH IN FEET..... 200 300 500

Note: Any above tapes furnished with measurements from outside end of rings, with extra foot before zero to 100ths, numbered from right to left or with end feet in inches and 8ths, or with Half Railroad Gage Mark—This mark, 2' 41/4" from zero, put on any above tapes, when specified, at no extra charge.

NOTE-Numbers shown in (-) are Lufkin numbers

See Price List Inside Back Cover

PAGE 286 Posson

The 'reel stand Graduation from reel, Sturdy me long, foldinandle an rewound.

Measi

Wid

Gradi

72871 Co

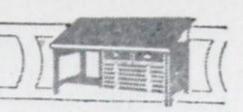
72872 Ta Meast Li

72873 Co

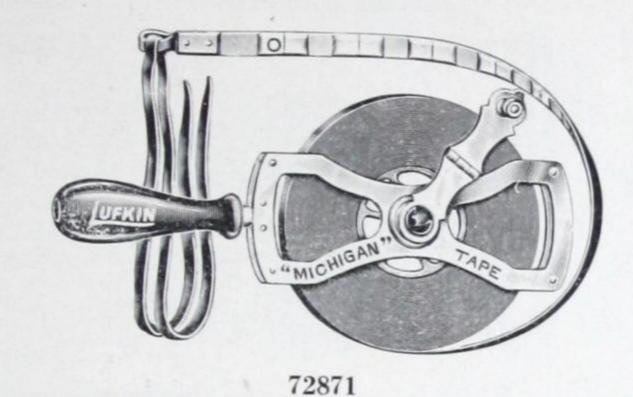
72874 Ta

Tapes at no extra

Note tapes, whe



"MICHIGAN" CHAIN TAPES



72872-72874 — Actual Size of Tape

The Most Substantial Chain Tape Made

The "Michigan" is especially popular in railroad and highway work. Line and stand up well in hard service. Line is of extra tough steel, white metal coated. uations and figures are deeply stamped into babbitt metal. Line is detachable reel, has heavy brass end clips, and is furnished with a pair of leather thongs. ly metal reel, in dull nickel plated finish, with polished hardwood handle and folding winding, handle. Tapes over 100 feet long have 4-arm reel with "D" le and spike end. Spike aids in holding reel when line is being withdrawn or und.

Width: 5 Inch. Approx. Thickness: .015 Inch. Markings on Babbitt Metal

Graduated every foot, with end feet in 10ths.

Measurement beginning 6 inches from end of tape.

LENGTH IN FEET	100	200	300	500
	(3100) (3200	0) (3300)	(3500)
Complete with reel EAC	Н			
((03100)	(03200)	(03300)	(03500)
Pape only Each Measurement beginning at outside end of	f rings.			
LENGTH IN FEET 10	0	200	300	500
(310	00A)	(3200A)	(3300A)	(3500A)
Complete with reel EACH				
(03100A)) (03	200A)	(03300A)	(03500A)
Tape only Each				

Tapes with extra foot before zero in 10ths, numbered right to left, can be furnished extra cost.

NOTE: Half Railroad Gage Mark—This mark, 2' 41/4" from zero, put on any above , when specified, at no extra charge.

End Feet in Inches—Above tapes so marked, no extra charge.

NOTE-Numbers shown in (-) are Lufkin numbers

See Price List Inside Back Cover

Some Page 287 Johnson



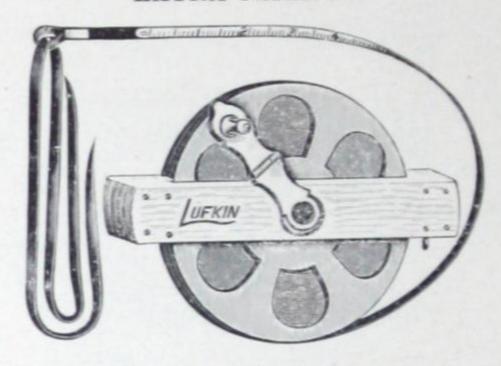


"CANYON" CHAIN TAPES

EXTRA NARROW

Etched Graduations

"Nubian" Finish



4.5

Actual Size of Tape

Width: 1/8 Inch. Approximate Thickness: .025 Inch. Etched Markings.

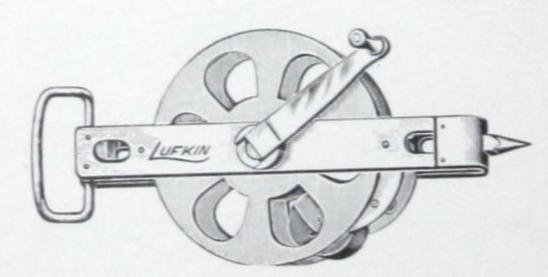
This is a sturdy steel tape and, being extra narrow, reduces wind resistance and handles well among obstructions and on rough ground. It has "Nubian" Finish. Markings and figures are black and cut into raised bright portions of the tape. A pair of leather thongs is furnished with each tape. Perforated disk reel of sheet steel, in dull nickel plated finish, and mounted in hardwood frame, with leather strap handle. Long, folding winding handle. Line has heavy brass clip and blank space at each end. It is detachable from reel.

Graduated every foot, with end feet in 100ths. Blank space each end.

	Length in Feet	100 (4100)	200 (4200)	300 (4300)	500 (4500)
	Complete with reel				
72883	Tape onlyEach	(04100)	(04200)	(04300)	(04500)

Note: Any above tapes with extra foot before zero to 100ths, numbered from right to left or with end feet in inches and 8ths. No extra charge. Specify by suffix "B".

TAPE REELS



An all-steel medium weight, sturdy reel—7 inches in diameter, mounted in 12-inch frame, exclusive of handle and spike point. The 5-inch winding handle gives good leverage and turns over to lock in either end of reel. Hardwood spring tension roller rides on the tape, helping it to wind evenly. Made in three capacities varying only in width. Spike Point is regularly furnished on all but 100-foot size.

In Ordering Always State Length, Width and Type of Line to Be Accommodated.

72884 Real for 100 ft tames		
72884 Reel, for 100 ft. tapes	 	
72885 Reel, for 200 to 300 ft. tapes	 	
72886 Reel, for 500 ft. tapes	 	

NOTE—Numbers shown in (—) are Lufkin numbers

See Price List Inside Back Cover

PAGE 288 Johnson

A sture metal williang, fold drum and

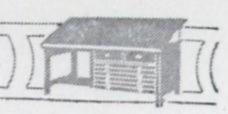
Made i mameter. and \$\frac{5}{16}\$ in 100 feet 1 Tapes 200 as Nos.

72891 Ge

shown on

THE STATE OF

B. K. ELLIOTT COMPANY



TAPE REELS

COLOGICAL SURVEY REEL

sturdy 6-arm Reel of rust-proof al with sides perforated. Has be folding winding handle, large and polished hardwood "D" wing handle.

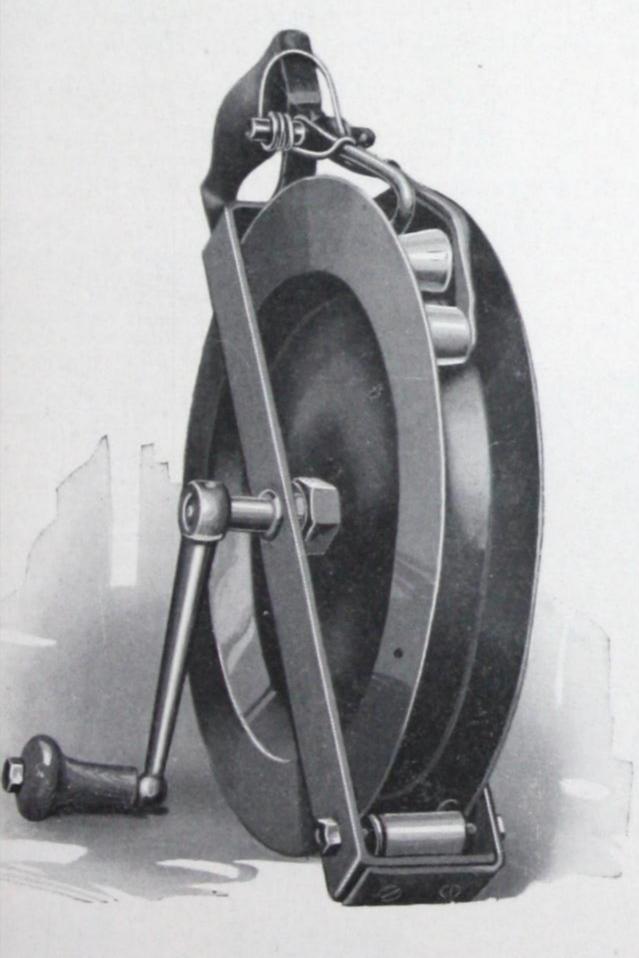
ade in one size only, 11¼ inchapter. Will accommodate ¼ $\frac{5}{16}$ inch Etched Chain Tapes feet long, and $\frac{5}{16}$ inch Babbitt as 200 feet long, i.e., lines such los. 72852, 72862 and 72872 in on pages 285, 286 and 287.

EACH

1 Geological Survey Reel



"JOHNSON" REEL



Designed by Engineers for Engineers. The most ruggedly built Reel. All steel construction with a long winding handle and full width carrying handle.

The tension spring rollers keep the tape in place.

All worn or broken parts can be replaced with little effort.

"Johnson" Reel.

EACH

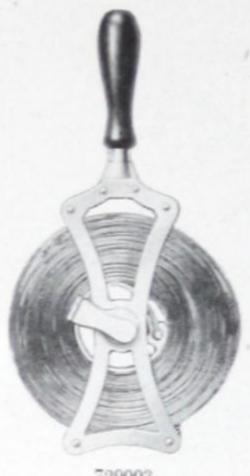
See Price List Inside Back Cover

Some Page 289 Johnson

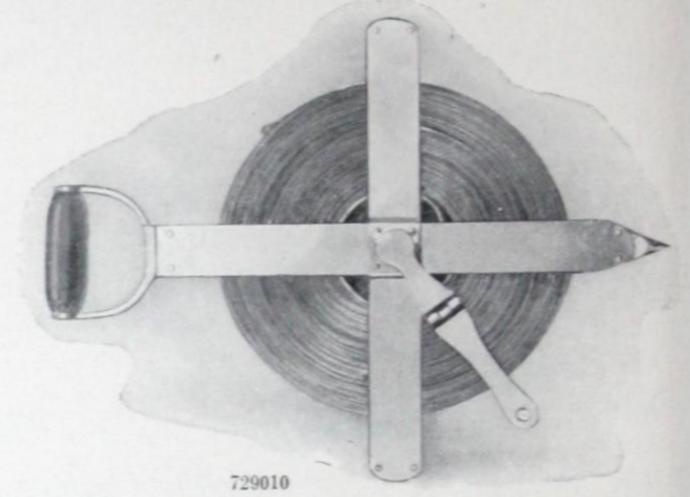




"CHICAGO" TAPES







Without

Reel

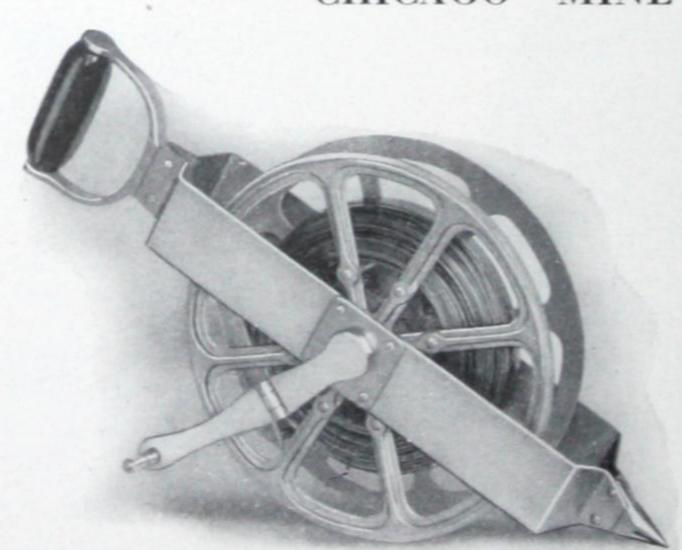
With

Metallic

Reel

Graduation Graduation beginning 16 Inch Wide 6 inches from beginning at end of end of Steel Ribbon LENGTH Steel Ribbon 729001 729002 50 feet 100 feet 729003 729004 729005 729006 150 feet 200 feet 729007 729008 729009 729010 300 feet 729011 729012 500 feet 16-Inch wide tape furnished if specified at the same price as above, without reel

"CHICAGO" MINE TAPE



LENGTH

STYLE STYLE STYLE "X" "Y" "Z" EACH

729013 100 feet without reel 729014 150 feet without reel 729015 200 feet without reel 729016 300 feet without reel 729017 400 feet without reel 729018 500 feet without reel

If reel is desired, we recommend our new 729019 "CHICAGO" Mine Reel......EACH

"Chicago" Mine Tape The insistent demand for a

PRICE EACH

With

Wooden

Reel

MINE tape made of the best steel obtainable is our reason for manufacturing a tape with graduations stamped in brass sleeves securely soldered to tape.

It can be furnished in all widths of steel, from which we make our well-known "CHICAGO" tapes. (1/8 inch to 1/2 inch.)

Style "X" graduated every foot with end feet in tenths.

Style "Y" graduated every five feet with end five feet every foot, end feet in tenths.

Style "Z" graduated every ten feet with end ten feet every foot, end feet in tenths.

Tapes furnished with extra graduated foot on first or both ends and with extra steel for hand-hold at no additional charge. Tapes furnished with blank space on ends unless otherwise specified. Tapes can be furnished in any lengths desired; ask for prices on special length or graduations.

See Price List Inside Back Cover

voices Page 290 voices

popularit BET EXCE

729102 (

729101 (

729103 (3 729104 (

on Germa 729105 (3

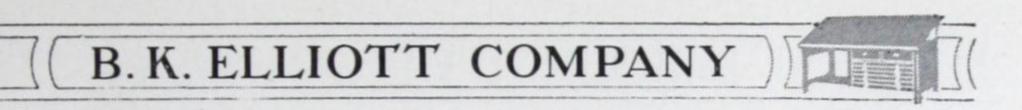
729106 (3 729107 (3 729108 (3

729109 (3 729110 (3 729111 (3

729112 (3 729113 (3 729114 (3

For I

for plus



"LUCAS" STEEL CHAIN TAPES

"Lucas" Chain Tapes have been manufactured and used extensively with increased oularity. Made of the finest tape steel and plated with anti-rust coating, assuring the r excellent performance. A pair of rawhide handles accompanies every tape.

		Tape 15-64 Inch Wide	EACH
101	(311)	100 feet, graduated to feet, each five feet by soldered bands marked with figures, intermediate feet by rivets, each end foot to tenths	s t
102	(311X)	101 feet, same as 729101, but with extra end foot graduated to tenths	
103	(321)	100 feet, with soldered bands, figures every foot, each end foot to tenths	t
104	(321X)	101 feet, same as 729103, but with extra end foot graduated to)

"LUCAS" NARROW CHAIN TAPES

1/8-inch wide. All tapes plated with antirust coating, graduations and figures being German silver bands clasped and soldered around the tape.

	Each	н
105 (331)	100 feet, marked by bands every foot, same style as 729103	
106 (332)	200 feet, marked by bands every foot, same style as 729103	
107 (333)	300 feet, marked by bands every foot, same style as 729103	
108 (334)	400 feet, marked by bands every foot, same style as 729103	
9109 (335)	500 feet, marked by bands every foot, same style as 729103	
9110 (372)	200 ft., marked every 5 ft., end 5 ft. to ft., each end ft. to tenths	
9111 (373)	300 ft., marked every 5 ft., end 5 ft. to ft., each end ft. to tenths	
9112 (374)	400 ft., marked every 5 ft., end 5 ft. to ft., each end ft. to tenths	
9113 (375)	500 ft., marked every 5 ft., end 5 ft. to ft., each end ft. to tenths	
9114 (391)	1000 ft., marked every 50 ft., end 50 to 10, end 10 to ft., each end ft. to tenths. (Made to order only)	

For Nos. 729101 to 729109:

For plus reading, extra foot to 10ths beyond zero only, add X to number thus: 729101X = 101 feet, same price

r plus reading, extra end foot to 10ths beyond each end, add XX to number thus: 729101XX = 102 feet

For Nos. 729110 to 729113:

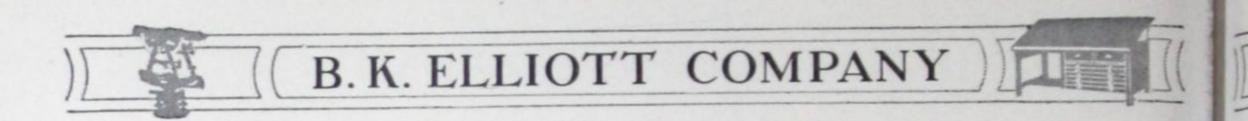
For plus reading, 5 feet to feet beyond zero, add X to number thus: 729110X = 205 feet, extra

For 5 extra feet to 10ths of a foot beyond zero add XI to number thus: 729110XI = 205 feet, extra

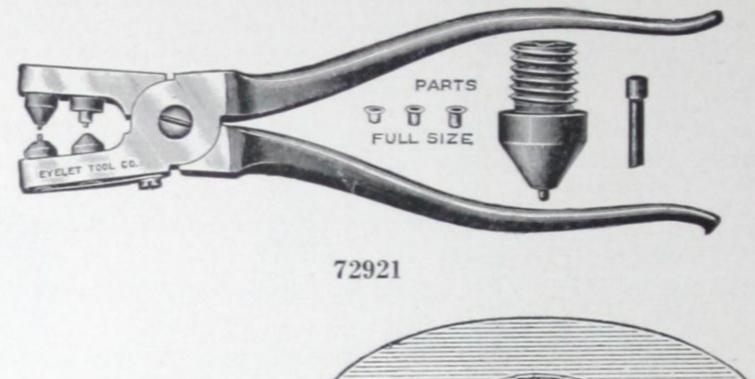
NOTE—Numbers shown in (—) are Lucas numbers

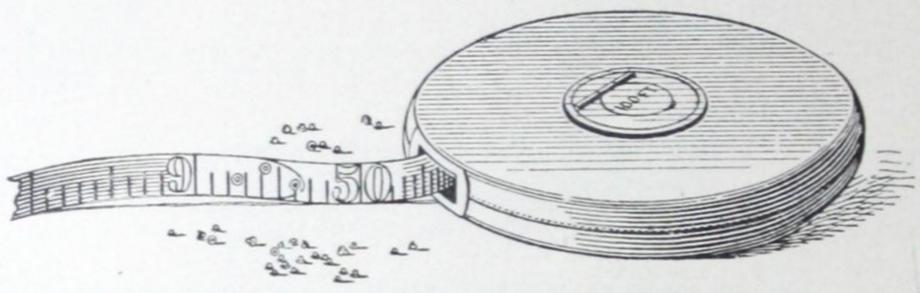
See Price List Inside Back Cover

Some Page 291 Johnson



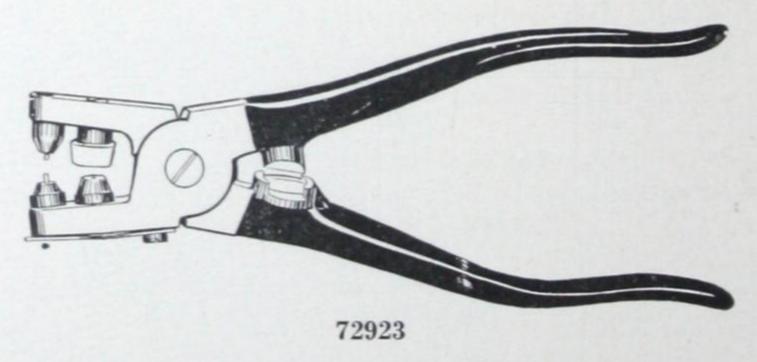
TAPE REPAIR OUTFITS





The "Punch and Riveter" set for Repairing Steel Tapes. Five minutes only required to mend an ordinary break

Can be carried in instrument box, thus enabling an engineering corps to repair their broken tapes in the field with the loss of a few minutes' time. Cuts a clean hole through two thicknesses of steel tape without drawing the temper. No filing required, holes can be cut near the extreme edge without splitting the tape, thus avoiding any chance of dirt collecting under the splice, cutting the fingers when drawing tape through the hands, or catching in rags when cleaning, etc.



PUNCH, SHEARS AND RIVET SETS

This tool combines all the necessary features to repair steel tapes in the shortest time and the neatest way. The punch will cut through two thicknesses of Lufkin or Chesterman's Tapes or one thickness of the heavy chain tape.

See Price List Inside Back Cover

Some Page 292 Johnson

A st and weig The Its punc one or t

of holes is readily each Kit.

9 x 3½ 1

Pair Rive

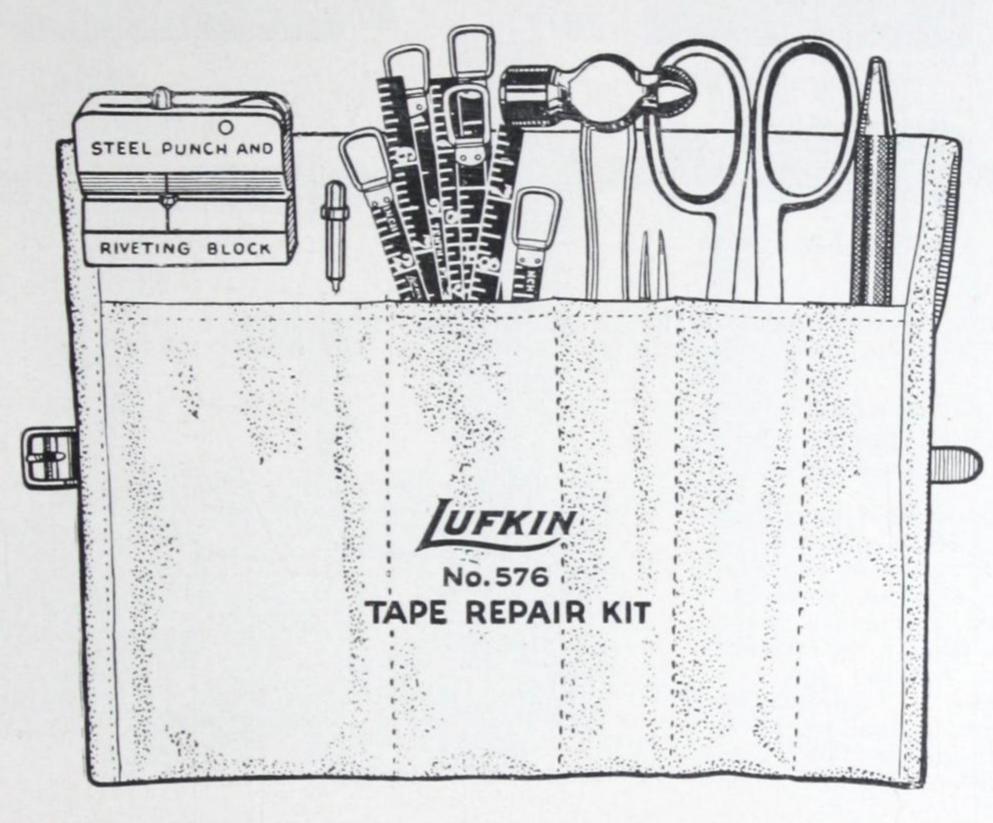
Rive

72931 T





TAPE REPAIR KIT



Suitable for Bench or Field Use. In Leatherette Case.

A sturdy and most practical all-purpose outfit for splicing steel tapes of all widths d weights.

The solid steel punch block, 21/8 inches high, sits firmly on its 7/8 x 23/4 inch base. punching plunger has head for striking with hammer and at one blow will pierce e or two thicknesses of any tape. Light hammer tap on fulcrum lever raises the inger. Front face of block has notch, tape slot and sighting line, so accurate locating holes is simple. Back face has flush inset, hardened riveting block. Punching plunger readily removed by withdrawing set screw, and one extra plunger is furnished with ch Kit.

Kit complete is compactly put up in leatherette case with tie strap, and folds to $3\frac{1}{2} \times 1\frac{1}{2}$ inches.

KIT CONTAINS THE FOLLOWING ITEMS:

Steel Punch Block with Punching Plunger (also riveting block).

Pair of Cutting Snips (8-inch).

Pair of Tweezers.

Riveting Hammer (8-inch).

Solid Steel Rivets (1,000 in screw top box).

Rivet Set.

Extra Punching Plunger (for punch block).

Steel Tape Repair Pieces (one lot of various widths, weights and graduations, with and without ring).

Leatherette Case for all above.

Tape Repair Kit. In Leatherette Case EACH 931

Weight of Kit Complete, 27/8 lbs.

See Price List Inside Back Cover

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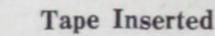




TAPE SPLICES



As Furnished





Side Flaps Down

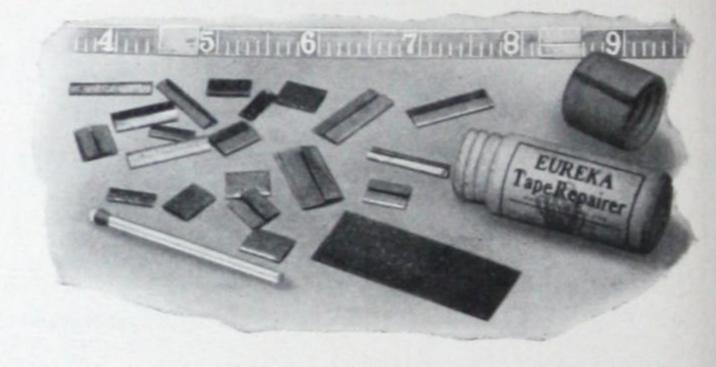


As Applied

EACH PER DOZ.

"EUREKA" TAPE SPLICES

Are formed in the shape of a sleeve, coated with a combination of solder and flux so sensitive the heat from a common match will make a perfect adhesion between tape and sleeve. Furnished one dozen in small metal box with full directions. State width of tape when ordering.



. PER DOZEN 72942 Eureka Tape Splices.....





. EACH 72943 Little Giant Tape Splice, for 1/8, 1/4, 3/8, 1/2-inch tapes

ADJUSTING PINS

For Transit or Level

EACH

Leather case, with two large and two medium adjusting pins. Large Adjusting Pins..... 72945

Small Adjusting Pins..... 72946

TRANSIT OIL

The best oil for lubricating surveying instruments, a Sperm Oil. It will flow at all temperatures. Will not become tacky or thick.

PER BOTTLE

72947

See Price List Inside Back Cover

PAGE 294 Power

729501 729502 729503

729508 729509 729510

729514

729515 729516 729517

729518

729519

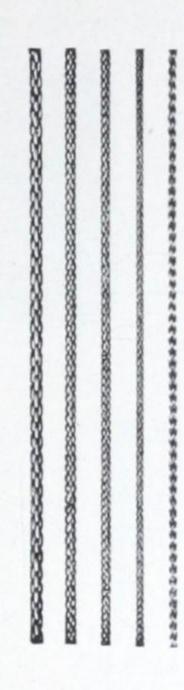




PLUMB BOBS







These plumb bobs are made from red brass castings. They are absolutely true with a stream-lined, quick centering, sighting point. All plumb bobs have a removable point made of cold-rolled steel.

EACH

29501	Brass Plumb Bob, about 6 ounces, steel point, screw cap	
29502	Brass Plumb Bob, about 8 ounces, steel point, screw cap	
29503	Brass Plumb Bob, about 10 ounces, steel point, screw cap	
29504	Brass Plumb Bob, about 12 ounces, steel point, screw cap	
29505	Brass Plumb Bob, about 14 ounces, steel point, screw cap	
29506	Brass Plumb Bob, about 16 ounces, steel point, screw cap	
29507	Brass Plumb Bob, about 19 ounces, steel point, screw cap	
29508	Brass Plumb Bob, about 24 ounces, steel point, screw cap	
29509	Brass Plumb Bob Cap	
29510	Plumb Bob Steel Point, specify Bob weight	
Oth	er weights furnished to order.	
29511	Mercury Plumb Bob, 3½ ounces, 4 inches long, ½-inch diam	
29512	Mercury Plumb Bob, 6 ounces, 4½ inches long, 5/8-inch diam	
29513	Mercury Plumb Bob, 12 ounces, 53/8 inches long, 7/8-inch diam	
29514	Mercury Plumb Bob, 16 ounces, 6 inches long, 1-inch diam	

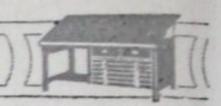
Plumb Bob Line

PER REEL OF 25 YDS.

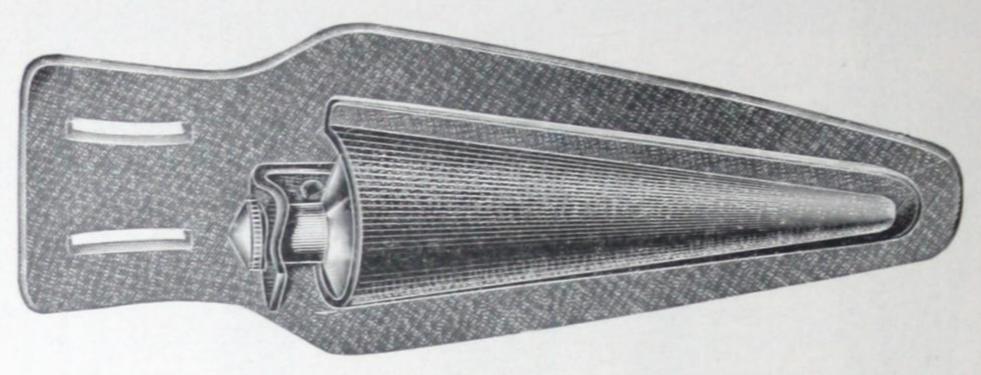
29515	Plumb	Bob	Line,	Best	Braided	Linen,	Thick
29516	Plumb	Bob	Line,	Best	Braided	Linen,	Medium
29517	Plumb	Bob	Line,	Best	Braided	Linen,	Thin
29518	Plumb	Bob	Line,	Best	Braided	Linen,	Ex. Thin.
29519	Plumb	Bob	Line,	Best	Braided	Silk	

See Price List Inside Back Cover





PLUMB BOB SHEATHS



EACH

72961 Small Size Sheaths, heavy black leather, for 6 and 8-ounce bobs.....

72962 Medium Size Sheaths, heavy black leather, for 10 and 12-ounce bobs...

72963 Large Size Sheaths, heavy black leather, for 14 and 16-ounce bobs....

72964 Extra Large Size Sheaths, heavy black leather, for 19 and 24-ounce bobs...

LINE AND SURFACE LEVELS



72965 Line and Surface Level.....

EACH

729701

729703 729704

729705 729706

PLUMB BOB STRING TARGET



Made of light metal, the Plumb-Bob String Target is 4 inches long and 2 inches wide, and weighs about 1 ounce. When attached, string should be back of main body of target through slots to front of target and seated in notches in bead, which are in line with division on face of target.

If held so that finger touches top of target, rotation is prevented and the weight of the plumb-bob prevents oscillation. Easily carried in the vest pocket, and invaluable for mine and tunnel work.

72966 Plumb Bob Target.....

EACH

See Price List Inside Back Cover



STAKE TACKS AND MINE SPADS

FOR SUSPENDING PLUMB BOB

Made of high quality tempered steel, they will not bend when driven into pegs or roof of mine. Holes are perfectly centered, 5/32-inch diameter.

The diamond shape hole in No. 729704 Mine Spad gives positive placement of string in hole.



729702



729703



729704



729705

PER GROSS

NOTE-729701, 729702, 729703 and 729704 can be furnished in non-rust finish at a small additional

EACH
Stake Tacks, galvanized or brassed, per 2-ounce boxes.....

ARROWS



729701

eost.

729705

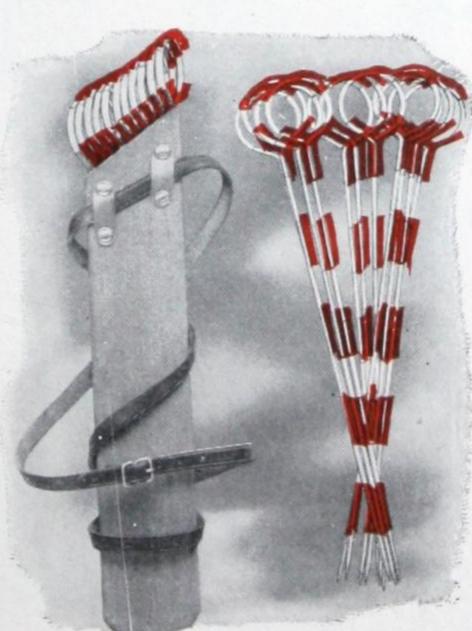
729706

729707 Steel Arrows, 11 in set, 10 inches long, W. G. 6. Set

729708 Steel Arrows, 11 in set, 14 inches long, W. G. 6. Set

729709 Red and White Arrows, 11 in set, 14 inches long. Set

729710 Leather Quiver, with belt loop, for set of arrows, 12 or 14 inches. Each



See Price List Inside Back Cover

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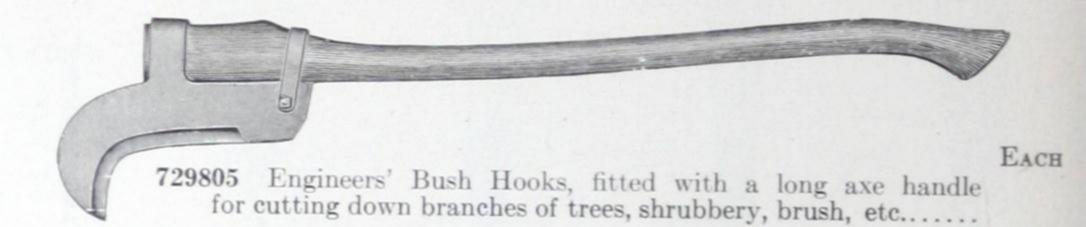
ENGINEERS' FIELD ACCESSORIES



Engineers' Bush Knives for cutting down shrubs, small trees, brush, pointing stakes, etc.

EACH Engineers' Bush Knives, 22-inch blade..... 729801 Engineers' Bush Knives, 17-inch blade..... 729802 Scabbard for 22-in. Bush Knife..... 729803

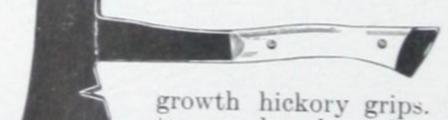
Scabbard for 17-in. Bush Knife.... 729804



Engineers' Axes with broad heads for sharpening and driving stakes, cutting down trees, etc.

EACH 729806 729807

ENGINEERS' BELT AXE



Finest Belt Axe made, all steel construction. Head and handle in one piece, with second growth hickory grips. Head cannot come off or loosen. Finest steel,

tempered and toughened to hold a hard keen edge.

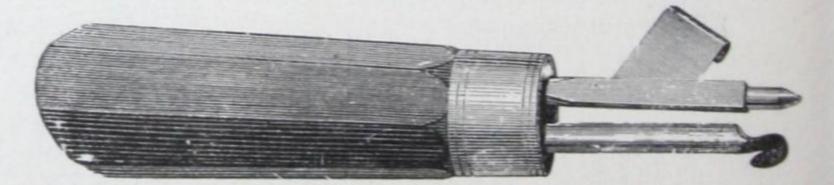
Belt Axe Only. Each

729809 Belt Axe Sheath, Each

cost. §

TIMBER SCRIBES

729810 Timber Scribe, 6½ inch, for marking on wood, large size. EACH....

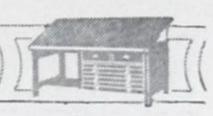


See Price List Inside Back Cover

PAGE 298 Person

型

B. K. ELLIOTT COMPANY



LEVELING RODS



Description on page 300

Oval targets are furnished on all 13-foot Rods. Round targets on Mine Rods. Micrometer target (73021) or Angle Micrometer (73022) supplied at additional ost. See page 302 for description.

See Price List Inside Back Cover

Some Page 299 Johnson

LEVELING RODS

	EACE	ī
730001	"Philadelphia Rod," hardwood, divided feet and half-10ths, Vernier reading to 100ths, with oval target, vernier and clamp, 7 feet, sliding out to 13 feet	
730002	"Philadelphia Rod," same as 730001, but divided into feet, 10ths and 100ths, vernier reading to 1000ths	
730003	"Philadelphia Rod," same as 730002, with the additional feature "Instantaneous" reading—showing the foot marks in small red figures, a great advantage on short sights, saving many errors	
730004	"Philadelphia Rod," 3 ply collapsible rod without target—over all closed 4.5 feet extended 12 feet	
730005	"Philadelphia Mining Rod," 2 ply hardwood, without target, divided feet, 10ths and 100ths—overall closed 2 feet, extended 3.5 feet	
730006	"Philadelphia Mining Rod," hardwood, divided into feet and half-10ths, vernier reading to 100ths, with target, vernier and clamp, 3.3 feet, sliding out to 5 feet	
730007	"Philadelphia Mining Rod," same as 730006 , but divided feet, 10ths and 100ths. Vernier to 1000ths	
730008	"Philadelphia Mining Rod," hardwood, divided into feet and half-10ths, vernier reading to 100ths, with target, vernier and clamp, 5.3 feet, sliding out to 9 feet	
730009	"Philadelphia Mining Rod," same as 730008 , but divided into feet, 10ths and 100ths, vernier reading to 1000ths	
730010	"Architect's Rod," hardwood, light color, divided into feet, inches and ½ inches, with target, vernier and clamp, 5½ feet, sliding out to 10 feet.	
730011	Narrow Stadia Rod, suitable for leveling and stadia. Pine 2½" wide, ¾" thick. Graduated either E or J type (see page 303). Made in 12 ft. length, slip lock joint	
730012	Wide Stadia Rod, for distance reading. Pine 4" wide, 7%" thick. Graduated with either K, R, T, X or Y (see page 303). Made in 12 ft. and 14 ft. lengths. Folding hinge lock joint	
730013	Rod Level, Circular Spirit Level	
730014	Rod Level, detachable and folds up for carrying in the pocket. Held against the rod or temporarily attached with a rubber band	

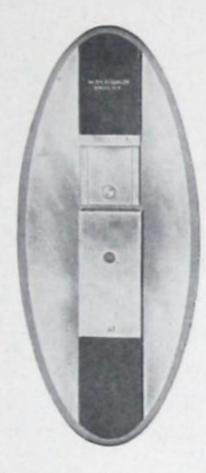
See Price List Inside Back Cover

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B. K. ELLIOTT COMPANY

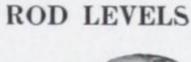


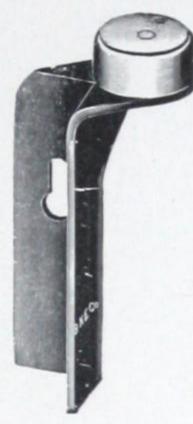
STADIA RODS



Slip Lock Joint

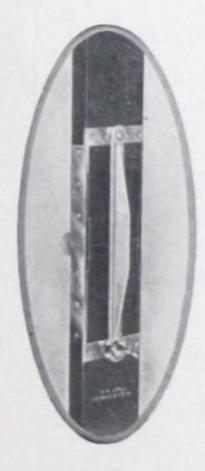
Used on narrow stadia and automobile sectional level rods shown on page 302.





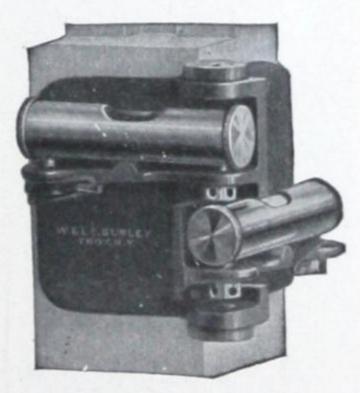
730013

Can be attached readily with screw, tack or tape.



Folding Hinge Lock Joint

Used on wide stadia rods.



730014

Held by hand or rubber band.

730011

For description on 730011 Stadia Rod see page 300.

See Price List Inside Back Cover

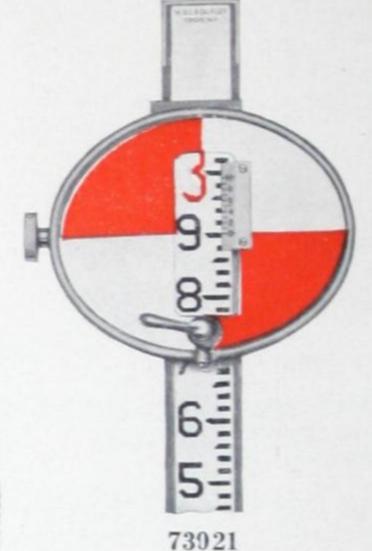
mono Page 301 Johnson



B. K. ELLIOTT COMPANY



"AUTOMOBILE"
SECTIONAL
LEVEL RODS



Micrometer Target

With the Angle Micrometer Target the horizontal dividing line is carried over two surfaces placed at right angles to each other, thus showing a continuous unbroken line only when the rod is held in a vertical position.

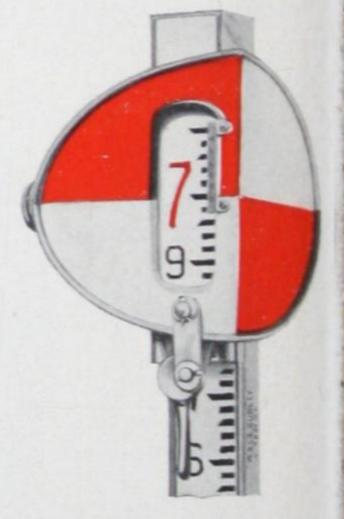
73022 Angle Target. Each



FOR STANDARD RODS

The Micrometer Target has an arrangement for setting the target consisting of an eccentric, controlled by a small handle placed at lower edge of target, which slides the target on an inner metal sleeve, permitting of rapid and accurate setting. Since the micrometer arrangement should be operated only after the target is clamped, the danger of accidentally moving the target after setting is eliminated.

73021 Micrometer Target....



Angle Micrometer Target

		EACE
73023	Automobile Sectional Rod, 12 feet, 3 sections graduated feet, 10ths and 100ths without target	Liter
73024	Same as 73023 but graduated feet, 10ths and half-10ths	
73025	Automobile Sectional Rod, 16½ feet, 4 sections graduated feet, 10ths and 100ths without target	
73026	Same as 73025 but graduated feet, 10ths and half-10ths	
73027	Automobile Section Rod Target	
	See Price List Inside Back Cover	

Some Page 302 Johnson

Our straight top an worked painted tions st foot fig furnishe graduat

Type A
sar
Type I
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Type C

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Type D

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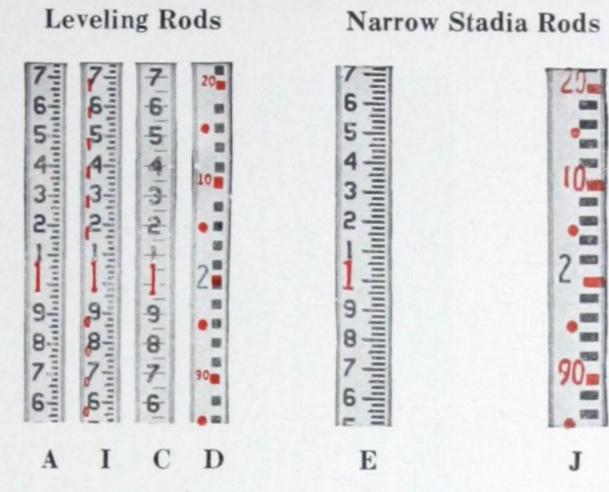




LEVEL AND STADIA ROD MARKINGS

LEVEL RODS

Our rods are made of seasoned, traight-grained maple, brass-shod op and bottom. Strong, easily-worked clamp. Face of rod is painted white with black graduations stamped into the wood. The oot figures are red, and can be urnished in the following types of traduations: A, I, C, and D, as hown in illustration.



Type A. Reading to feet, tenths and hundredths. With target by vernier to thousandths of a foot.

Type I. Same as Type A with the addition of the foot figure in red for instantaneous reading (No. 730003).

Type C. Reading to feet, tenths and half tenths. With target and vernier to hundredths.

Type D. Graduations are furnished in metric. They read meters, decimeters and centimeters. With target and vernier to millimeters (on order only).

NARROW STADIA RODS

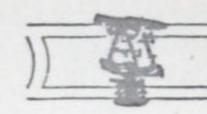
Made of basswood, straight grained, carefully selected, thoroughly seasoned. 2½" ride, ½" thick, 2" recessed face. Graduations red and black, on white painted face. Can be furnished with E and metric J markings on order. Type E graduations furnished nless otherwise specified.

WIDE STADIA RODS

Made of well-seasoned basswood, which is light in weight and does not warp asily. 4" wide with a 3½" recessed face. The patterns are distinctly marked on white ace of rod and covered with a coat of colorless, waterproof varnish. All metal fittings re heavy, securely fastened to the wood.

Wide Stadia Rods







FLEXIBLE POCKET LEVEL RODS

Paper Cloth

5 = 4 =	5-	6-	5==	5-	3	7:	6-11-11-1	6-	F		1 9 1
5 4 3 2 1 69 8 7 6 5 4 3 2 1 5 9 8 7 6 5 6 5 4 3 2 1 5 9 8 7 6 5 6 5 6 5 6 7 6 7 6 7 6 7 6 7 6 7 6	5-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	6 5 4 3 2 1 1 10 9 8 7 1 10 9 8 7 1 10 9 8 7 1 10 9 8 7 1 10 9 8 7 1 10 9 1 10 9 1 8 7 1 10 9 1 10 10 9 1 10 10 9 1 10 10 10 10 10 10 10 10 10 10 10 10 1	5 6 7 8 9 7 1 2 3 4 5 6 7 8 9 8 1 2 3 4 1 D	5	34 24 94 84	7-1-1-2-1-3-4	6 5 4 3 2 1 6 1 10 9 8 7 6 5 4 3 2 1 5 11 10 9 8 7 6 5 4 3 2 1 5 11 10 9 8 7 6 5 4 3 2 1 5 11 10 9 8 7 6	67 8 9 10 11 7 1 2 3 4 5 6 7 8 9 10 11 10 10 10 10 10 10 10 10 10 10 10	3.	X	9 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8 9 1 1 2 3 4 5 6 7 8 9 1 1 2 3 4 5 6 7 8 9 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
6	9-	710	7=	10-	14.	94	6111111	7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	4	È	5 4 3
7 6 6 5 6	7- 6- 5-	9- 8- 7- 6-	3 4 4 5 1	3-	9	7	9-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	3-11-11-11-11-11-11-11-11-11-11-11-11-11	3	E.	2=
3111	4-3-	5 4 3	6= 7= 8=	6- 7- 8-			5-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	7-18-19-1	F	9	1 = 2 = 3 = 3 = 3
1	9-	1-1-1-1	9 1	9-			5-11-11-11-11-11-11-11-11-11-11-11-11-11	9	E	9=	5 6
8	8-	10 9 8	2 1 3 1	2-	84	24	10-11-18-13	3-1	2	Е	7 8
0=	6-		4=	4-				5-		-	1
A	В	C	D	E	F	G	Н	1	K	L	M

12½ Ft. 12½ Ft. 16½ Ft. UNDER 161/2 Ft. 201/2 Ft.

700101 (1)	T
	Feet, 10ths and 100ths, numbering up, width 1½ or 1½ in EACH
730402 (B)	Feet, 10ths and half tenths, numbering up, width 1½ or 1½ in Each
730403 (C)	Feet, inches and eighths, numbering up, width 1½ or 1½ in Each
730404 (D)	Feet, 10ths and 100ths, numbering down, width 1½ or 1½ in Each
730405 (E)	Feet, 10ths and half 10ths, numbering down, width 1½ or 1½ in Each
730406 (F)	Meters, 10ths and 100ths, numbering up.
730407 (G)	Meters, 10ths and 100ths, numbering downEach
730408 (H)	Feet, inches and fourths, numbering up.
730409 (I)	Feet, inches and fourths, numbering down.
730410 (K)	Links and 10ths 1
700414 (IX)	Links and 10ths, numbering up Each
730411 (L)	Feet and half 10ths, 2½ inches wide, 12 ft.
730412 (M)	Any style numbering both ways from a zero

Note: Above Rod Ribbons also available in brass except No. 730411. write for price.

Letters shown in (—) identify rods illustrated above.

See Price List Inside Back Cover

PAGE 304 Johnson

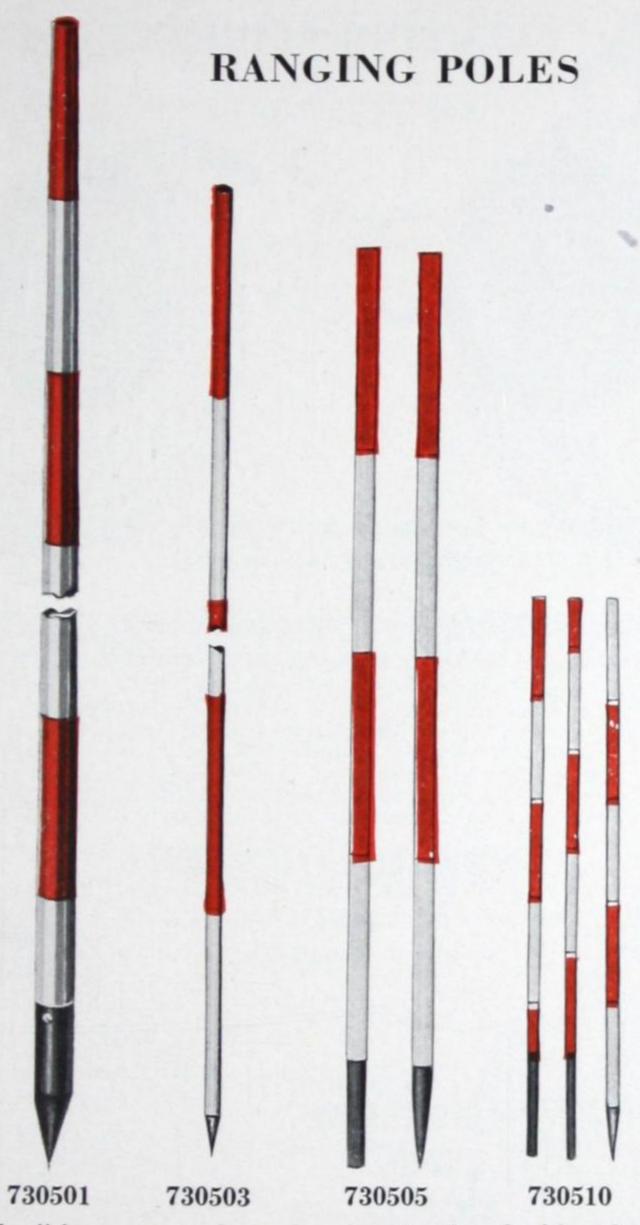
"Rang 730501 W 730502 W

730503 St 730504 St

730505 St

730506 Sa 730507 Sa 730508 Sa 730509 Sa 730510 St





Re	anging Poles," best seasoned wood, painted red and white alternately.
	Length, Feet 6 8 10
01	Wood octagonalEACH
)2	Wood, round
	el "Ranging Poles," hardened steel point, painted red and white alternately.
	Length, Feet 6 8
03	Steel, round, solid, ½ inch diameter, one piece EACH
)4	Steel, octagonal, solid, ½ inch diameter, one piece Each
	Еасн
)5	Steel, round, tubular, 1½" diameter, 2 sections, 4½ ft. long, telescope joint, with automatic spring catch at each joint. 8 ft. long, in canvas case
96	Same as 730505 but 3 sections, 12½ ft. long
7	Same construction as 730505 but sections 3½ ft. 2 sections, 6½ ft. long.
18	Same as 730505 but 3 sections, 9½ ft. long
9	Same as 730505 but 4 sections, $12\frac{1}{2}$ ft. long
0	Steel, round, tubular, 5/8" diameter, 3 sections 33" long, 71/4 ft. overall.
	Marked Red and White every 6 inches. In canvas case
	See Price List Inside Back Cover

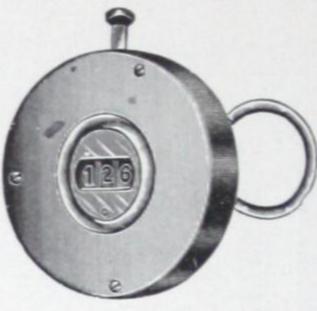
See Price List Inside Back Cover

Some Page 305 Johnson





TALLYING MACHINES



73061



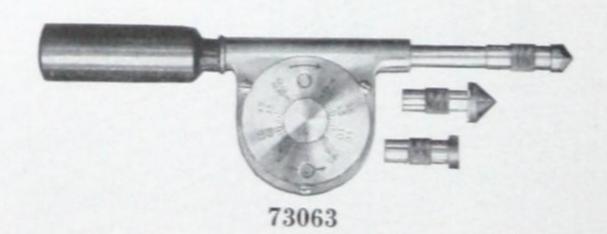
73062

EACH

- 73061 Tallying Machine, for keeping count by pressing on a knob, nickel-plated, registers to 999, arranged to set back to zero.....
- 73062 Tallying Machine (Veeder-Root), for counting and checking, chrome satin finish, registers to 9999, by pressing small lever. Reset to zero quickly by knob on side.....

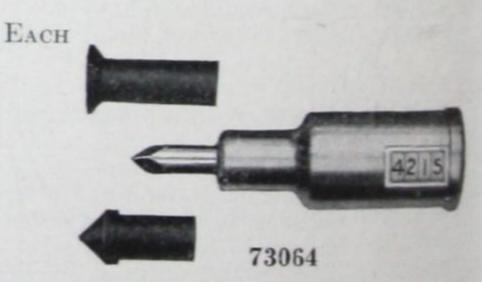
SPEED COUNTERS

For finding the revolutions per minute made by a shaft, fly wheel, or any other revolving part.



73063 Speed Counter, high speed, nickel-plated, 5 inches long, working parts encased, dial plate has two rows of figures reading right or left as the shaft may run. Two rubber tips for pointed and hollow centers. Directions with each counter.

73064 Direct Speed Counter for use on engine, motor, or line shaft, spindles, etc. Figures black on metal background. Maximum speed 2500 R.P.M. Non-reset. Chrome satin finish. Supplied with 2 rubber tips, one of them a suction cup.....



See Price List Inside Back Cover

Some Page 306 Johnson

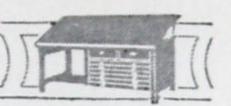
Gal where to 73071 73072 Gal a side sh control i

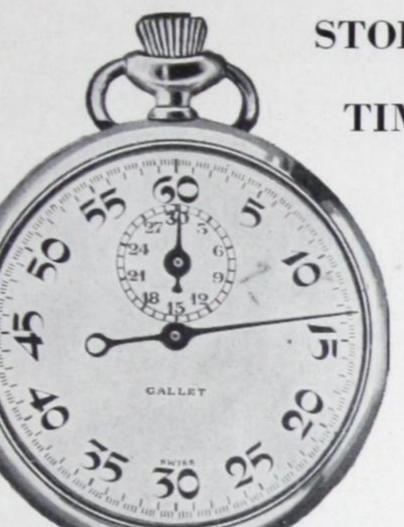
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73077 C

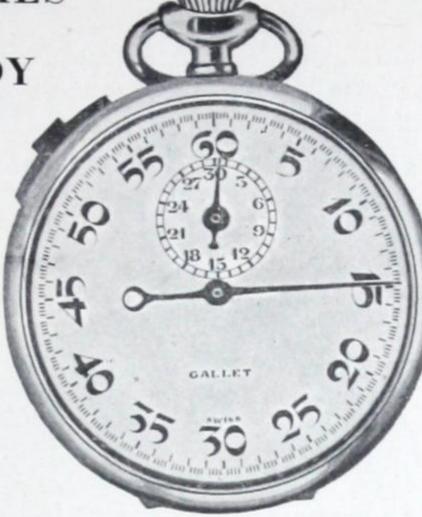






STOP WATCHES
FOR
TIME STUDY

60 second timers from one-fifth second to 30 minutes



73071

73073

Gallet Plain Timer, 3th second, 30 minute register. An excellent timer for industrial and sports use here take out time is not required. Starts, stops and returns to zero, by successive pressure of crown.

Gallet Football, Basketball and Production Timer where take out time is required. Equipped with side slide control for stopping and starting when lost motion and non-productive periods occur. Crown ntrol for zero setting. https://example.com/starting.c

DECIMAL TIME FOR PRODUCTION STUDY



73076

Registering from 100th of a minute up to 30 minutes



73077

Gallet Decimal Timer, for all kinds of timing where it is more convenient to use decimals of a minute figuring. With "time out" feature and crown zero setting.

See Price List Inside Back Cover

www PAGE 307 Johnson

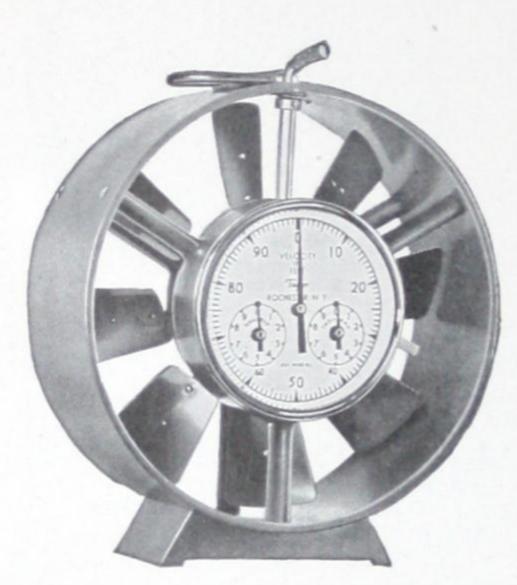




ANEMOMETERS

Used to measure air speeds or quantities of air passing through tunnels, mines, shafts, flues, etc., and for test and survey work in the Air-Conditioning, Ventilating and Industrial Fields.

Anemometers listed below are fitted with instant zero setting levers, also disconnector levers to stop movement of the hands at any point.



73081 Taylor "Biram" (domestic) 4" diameter. 3 dials reading to 10,000 feet. Jeweled movement, disconnector, automatic zero setting attachment, in carrying case, with corrections for use from 200 to 3000 feet per minute.

Each....

73082 Davis "Biram" Anemometer,

4" diameter. Two dials reading to 1000 feet. Lever zero setting with disconnector.

Suitable for air speeds from 75 to 1000 ft. per minute, with correction chart. In leather sling case.

Each

73083 Davis "Biram" Anemometer,
4" diameter. Four dials reading to 100,000 feet. Lever zero setting with disconnector. Sensitive at low speeds, yet covers a wide range.

Correction chart with each instrument. In leather sling case.



73094

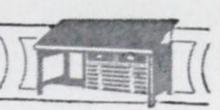
73095

See Price List Inside Back Cover

PAGE 308 Johnson

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B. K. ELLIOTT COMPANY





POCKET MAGNETIC COMPASSES

All compasses listed have jeweled needles, and stops to hold needle securely when not in use. They are sturdy and thoroughly reliable.



73092

EACH

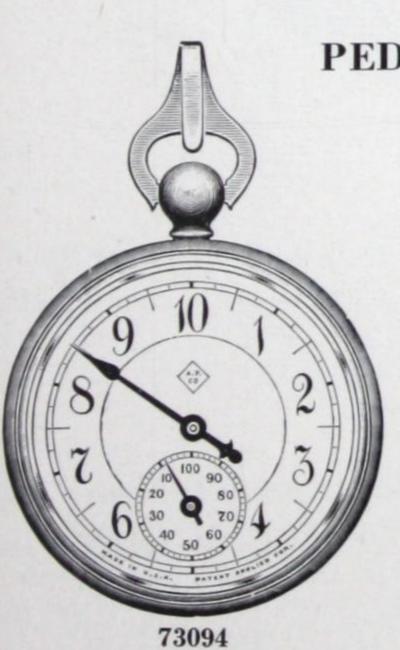


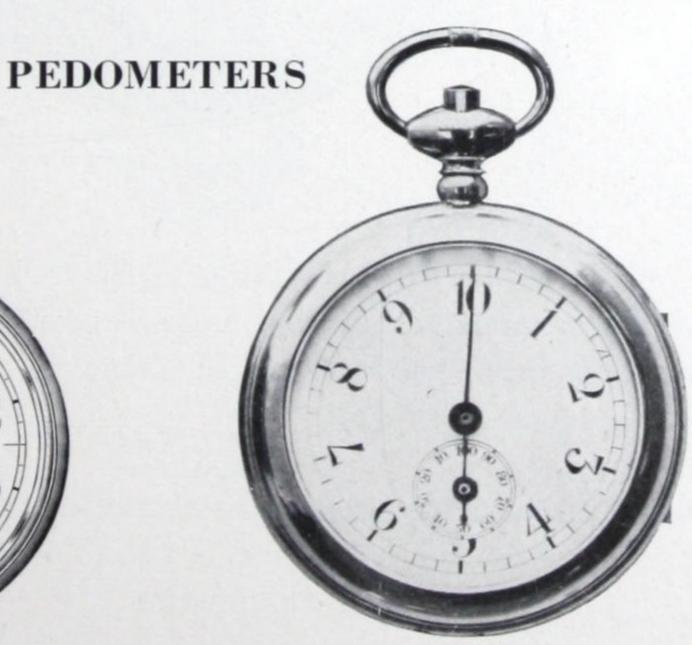
73091 "Leedawl," flat needle, black bakelite open-face case.....

73093

3094

3095





73095

EACH

Pedometer, watch pattern, nickel case, registering distance walked up to 100 miles.....

Pedometer, high grade, watch pattern, nickel case, registering up to 100 miles with automatic zero setting.....

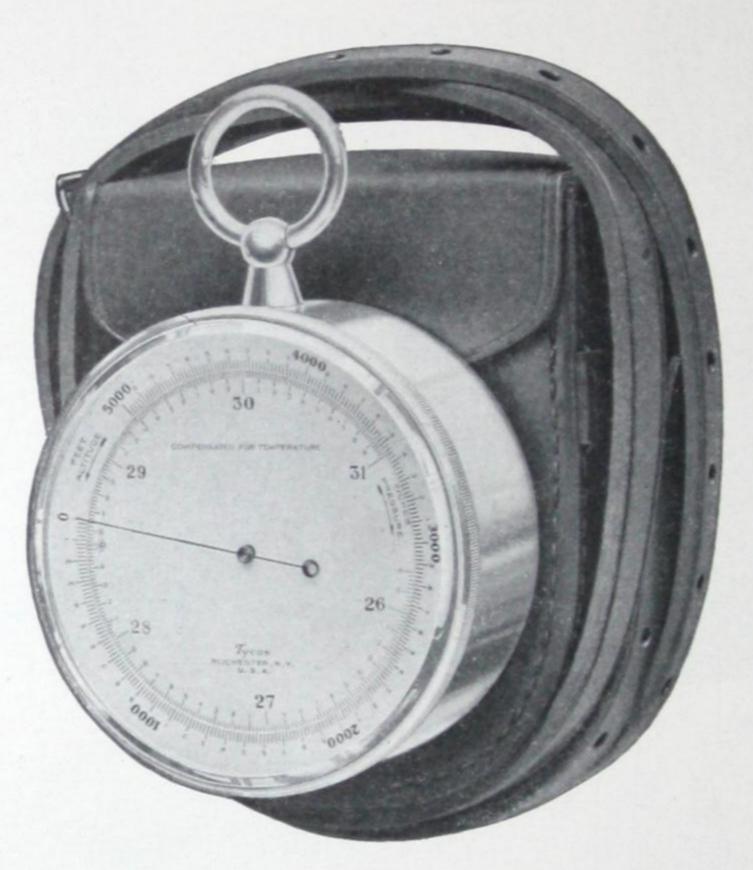
See Price List Inside Back Cover

Some Page 309 Joseph



ENGINEERING AND SURVEYING ANEROIDS

Compensated for Temperature



73101

One of the best field instruments for accurate and rapid approximate surveys in ascertaining variations in gradients and levels in road making, railways, canals, water-courses and in mining.

EACH

- 73102 Same as 73101 except reading to 10,000 feet in 50-foot divisions.....

See Price List Inside Back Cover

PAGE 310 Johnson

The meters and in Ou struction and based and b

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which is instrum wherein or inch principle lag and altitude elimina. An country

and Mu and mi Th reliable

Range:
(-7
Dial: No
Dimension
Carrying

Extras F

73111 (S





"PAULIN" SYSTEM PRECISION ALTIMETERS

The American "Paulin" System presents their new "SA" series of surveying Altimeters embodying many important improvements and refinements. New world stand-

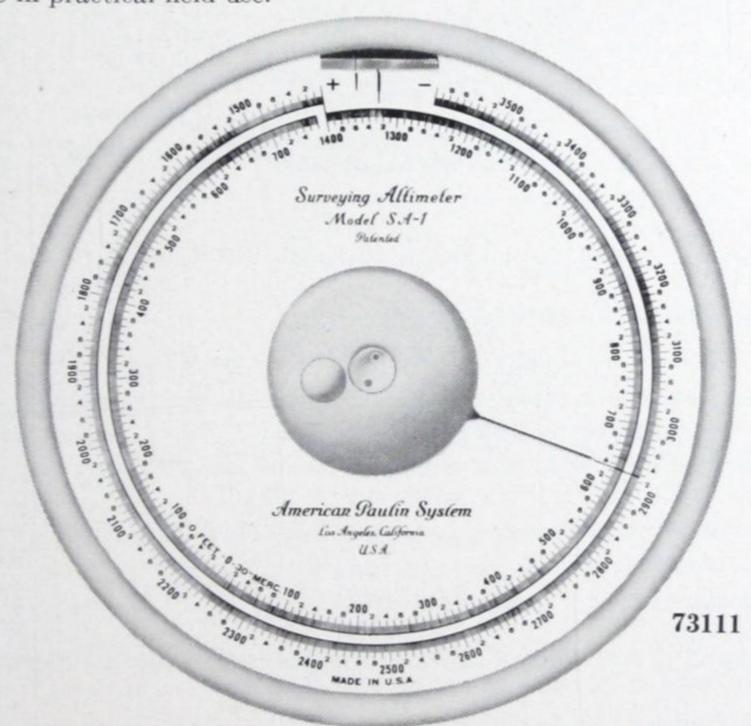
ards in sensitivity and accuracy have been attained.

Our exclusive system of instrumentation is the first new principle in Aneroid construction in over a hundred years. Ever since the time of Vidi, all aneroid altimeters and barometers have been constructed on the chain-and-lever principle, or minor adaptations, whereby the diaphragm fluctuations have been conveyed to readings on the dial through a combination of pivots, sectors, chains, bearings and levers, each of which represents a frictional part to detract from the sensitivity and accuracy of the instrument. All these parts are eliminated in American Paulin System construction, wherein pressure change is directly and without friction read in terms of feet altitude or inches pressure on the dial. Our instruments operate on the nul or zero-gauging principle and are temperature-compensated. They indicate altitude instantly without lag and it is never necessary to "tap" or vibrate the instrument to take readings. The altitude indicator is knife-edge and the balance indicator is needle point with mirror to be eliminate parallax.

American Paulin System instruments are in use throughout the world. In this country they are specified by various departments of the Federal Government, States and Municipalities, as well as all leading surveyors, engineers, explorers, geologists, oil and mining companies, educational institutions, laboratories and many others.

These new instruments have been designed to give you a lifetime of accurate and

reliable service in practical field use.



Range: Graduated in intervals of 2 feet, this instrument has a range of 4,360 feet (-760 feet to 0 to + 3,600 feet).

Dial: Non-glare precision scale with etched text.

Dimensions: Diameter 5". Height 3". Weight (with case) 43 oz.

Carrying Case: Instrument contained in handsome leather carrying case with hand and shoulder straps, designed for rugged field service.

Extras Furnished: High-grade Magnifier and Pocket Thermometer.

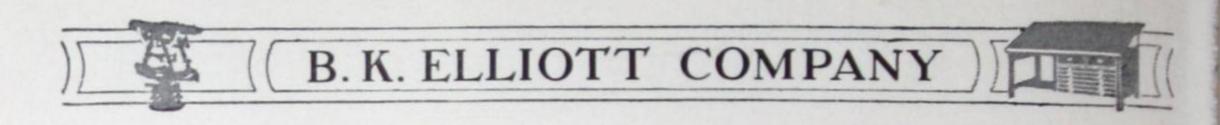
EACH

73111 (SA-1) Surveying Altimeter, including Case, Magnifier and Thermometer

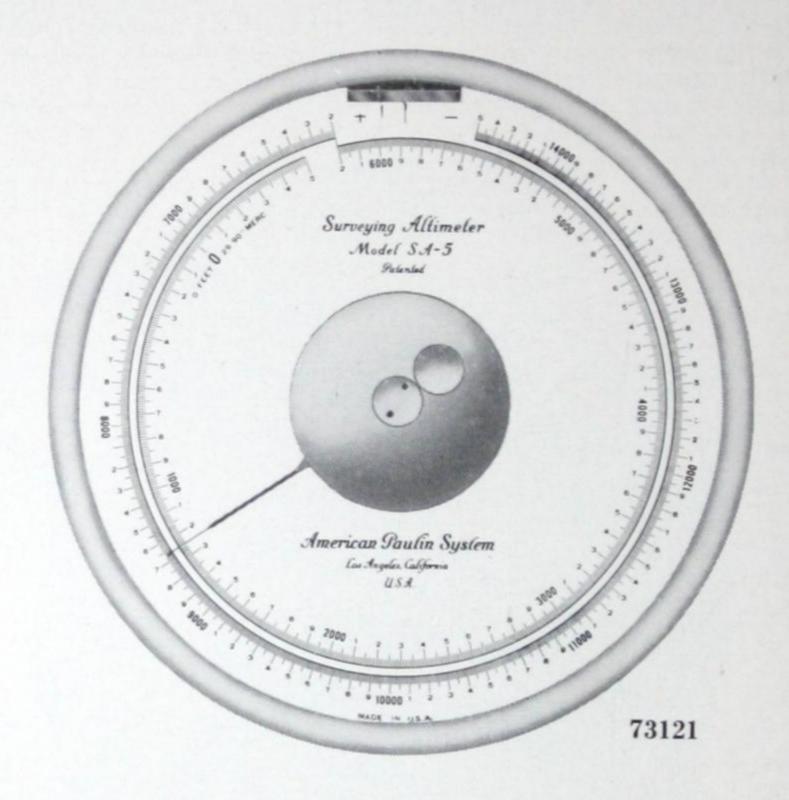
NOTE-Numbers shown in (-) represent manufacturer's numbers

See Price List Inside Back Cover

Some Page 311 Johnson



"PAULIN" SYSTEM PRECISION ALTIMETERS



Range: Graduated in intervals of 5-feet, this instrument has a range of 10,600 feet (-900 feet to 0 to + 9,700 feet).

Dial: Non-glare precision scale with etched text.

Dimensions: Diameter 5", Height 3". Weight (with case) 43 oz.

Carrying Case: Instrument contained in handsome leather carrying case with hand and shoulder straps, designed for rugged field service.

Extras Furnished: High-Grade Magnifier and Pocket Thermometer.

EACH

73121 (SA-2) Surveying Altimeter, including Case, Magnifier, and Thermometer

Range: Graduated in intervals of 10-feet, this instrument has a range of 15,000 feet (-500 feet to 0 to + 14,500 feet).

Dial: Non-glare precision scale with etched text.

Dimensions: Diameter 5", Height 3", Weight (with case) 43 oz.

Carrying Case: Instrument contained in handsome leather carrying case with hand and shoulder straps, designed for rugged field service.

Extras Furnished: High-grade Magnifier and Pocket Thermometer.

EACH

73131 Han

73132 Han

73133 Han

73134 Hand

73122 (SA-5) Surveying Altimeter, including Case, Magnifier and Thermometer

NOTE—Numbers shown in (—) are manufacturer's numbers

See Price List Inside Back Cover

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STADIA HAND LEVEL

HAND LEVEL AND STADIA LEVEL IN ONE INSTRUMENT



This hand level is a valuable instrument on preliminary surveys and railroad work, also for road contractors, excavating and building contractors, bridge and wharf construction and in pile-driving. The farmer also finds it indispensable in laying out irrigation and drainage ditches and water systems. It is simple to maintain a given fall or grade for sewers, as well.

This Improved Hand Level is a superior, high grade instrument in construction, workmanship and finish. The correctly arranged prism gives a clear and distinct image of the leveling and stadia features without glare or double reflection.

The design eliminates all screws on the outside of the case. The level vial is set in a heavy housing and is well protected.

Details of Construction

-	12 1	Eyepiece cap	11 Prism block
	13 2	Draw tube	12 Prism block screw
	14 3	Main hand level tube	13 Spring holding prism
	15 4	Cap holding magnifier	14 Plunger spring
	16 5	Magnifying lens	15 Plunger
	17 6	Insert unit complete	17 Adjusting screw
		Plug screw	18 Object cap
N.E.		Prism	20 Object lens
1		Level vial	21 Leather case (either size)
			Еасн
Hand Level, Standa	ard 7"without	Stadia	

132 Hand Level, Standard 7" with Stadia..... Hand Level, Special 10" without Stadia..... Hand Level, Special 10" with Stadia.....

133

134

Furnished in sewed leather belt loop case

See Price List Inside Back Cover

MAGE 313 MAGE

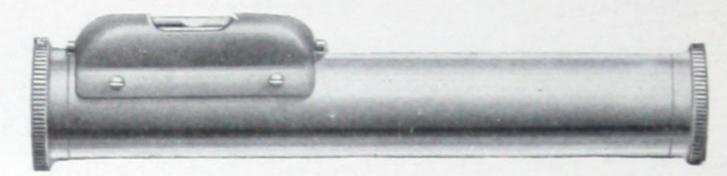




LOCKE HAND LEVELS

WITH DRAW TO EYE PIECE

The Locke Hand Level is indispensable for use in preliminary surveys. It is surprising the accuracy which can be obtained with the "Hand Level." It is equipped with a magnifying lens for magnifying the bubble, also brings the cross line into sharper and finer focus. The eye therefore is relieved of considerable strain. Furnished with a sewed leather belt loop carrying case, in cardboard box.



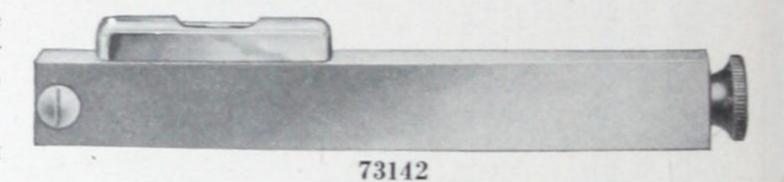
73141

73141 Locke Hand Level. round, made of brass, durable black finish.

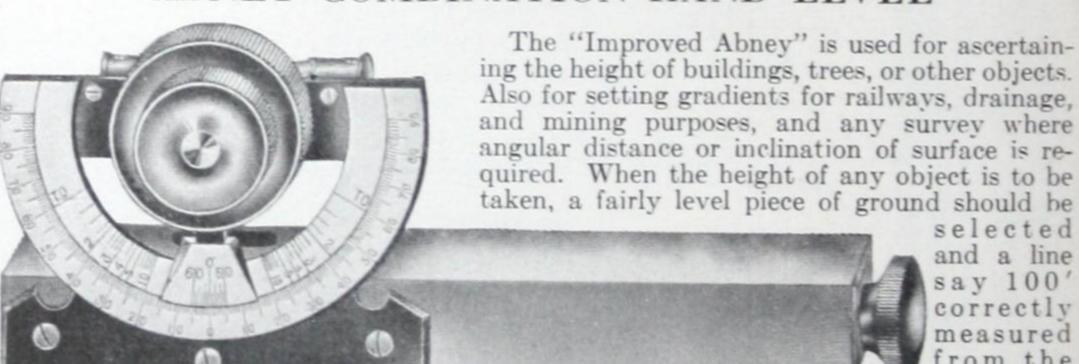
..... EACH

73142 Hand Level square type, brass, durable black finish, fixed eye piece.

. EACH



ABNEY COMBINATION HAND LEVEL



73145

ing the height of buildings, trees, or other objects. Also for setting gradients for railways, drainage, and mining purposes, and any survey where angular distance or inclination of surface is required. When the height of any object is to be taken, a fairly level piece of ground should be

selected and a line say 100' correctly measured from the object. This forms the base line.

At the end of this line the observer should stand and then directing his vision through the tube of the level, he should elevate it at the objective end until the highest point of the object is seen bi-sected by the cross wire of the reflector within the tube. While holding it steadily in this position, the spirit level which is attached to the axis of the arc should be turned upon its center by means of the milled head until the bubble reflected in the mirror is bi-sected by the cross wire of the reflector. The alignment is then complete and the height of the object is obtained by reading off the index of the arc.

EACH

Abney's Reflecting Level or Pocket Altimeter, square sighting tube 5", (Vertical arc 1") graduated 90 degrees in each direction in single degrees, vernier reading to 5 minutes, scale of grades from 1:1 to 1:10, 1" bubble, in stitched leather case.....

Same as above, but with percentage grade..... Abney's Reflecting Level or Pocket Altimeter, 5" with divided arc to show angles and with compass with bar needle, and socket for Jacob Staff,

in stitched leather case.....

See Price List Inside Back Cover

PAGE 314 Person

73151 73152 73153

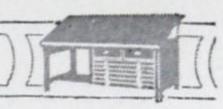
73154 73155 73156

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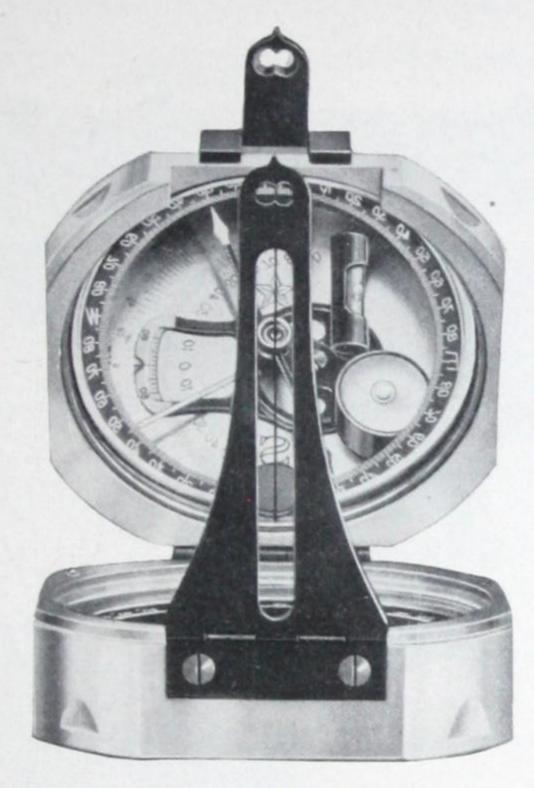
grades s a great





EACH

THE BRUNTON PATENT POCKET TRANSIT



73151

3151	Improved Type Brunton Pocket Transit, without case
3152	Ball and Socket Tripod Head
3153	Tubular Extension Tripod
3154	Leather Case with belt loop for instrument only
3155	Leather Case with sling strap for instrument only
3156	Leather Case for instrument, tripod head and tripod with sling strap

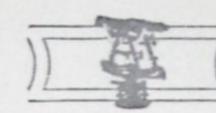
The Brunton Pocket Transit is a complete, accurate and reliable pocket instrunent, which has commanded a large sale during the past 30 years, and lately certain important improvements have been added. It has an aluminum case measuring 2¾ x ¾ x 1½ inches, which completely encloses the instrument, and the size permits it to e easily carried in the vest pocket, thereby obviating the use of leather case, although everal types of these are listed above. The magnetic variation is set off by means of the lotted head pinion shown in one corner of the case, which may be revolved by means of a screw driver or knife blade.

It is well adapted for use in taking courses, horizontal angles, vertical angles or rades and long tangents, and can be used as a level, clinometer and plumb. It is used great deal for vein tracing.

Transits and Levels repaired on short notice at lowest prices

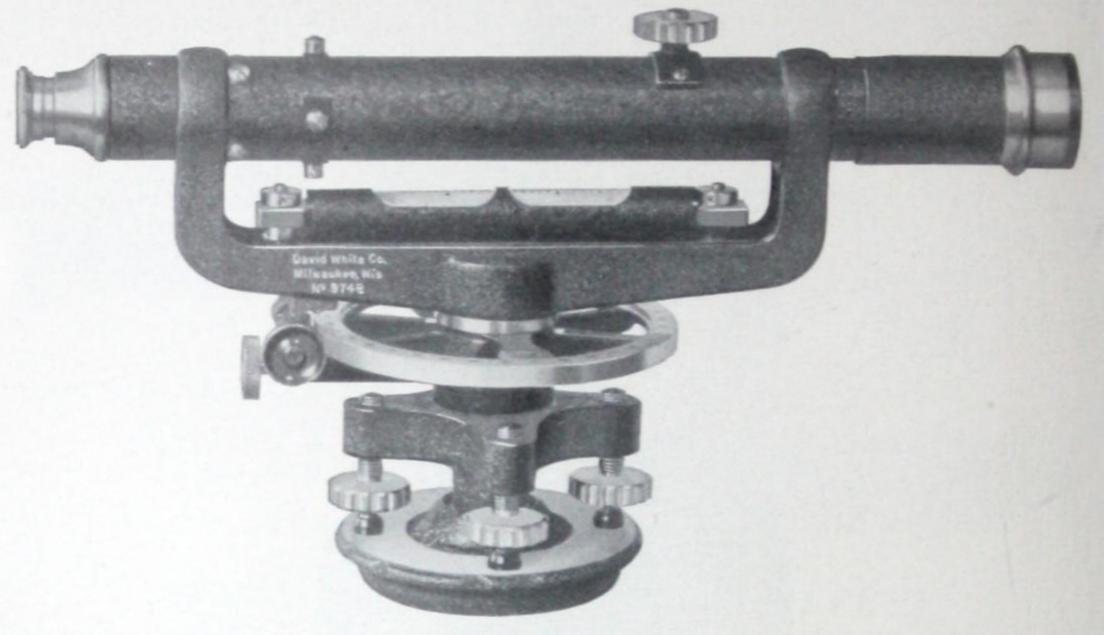
See Price List Inside Back Cover

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BUILDERS' LEVEL



73161

Telescope: Erecting 12" long, dust proof; magnifying power 25x, 1-1/4" objective with rack and pinion; spiral eyepiece for focusing Cross-Hairs.

Spirit Level: 5" long, ground and graduated, 60 seconds.

Level Bar: Reinforced cast bronze; compact wrought wyes and clips with improved lock pins.

Circle: 4" machine-divided to degrees and quadrants, with corrugated edge for setting to zero; vernier reading to 5 minutes, with clamp and tangent.

Center: Bell Metal, accurately fitted, 4 leveling screws with cups attached; shifting center and base plate with trivet points.

Equipment: Finished hardwood carrying case, with plumb bob, sunshade, etc., and full-length Tripod.

73161 Builder's Wye Level.... Each

73162 Extension Tripod, extra.....

Transits and Levels repaired on short notice at lowest prices

See Price List Inside Back Cover

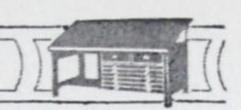
PAGE 316 Johnson

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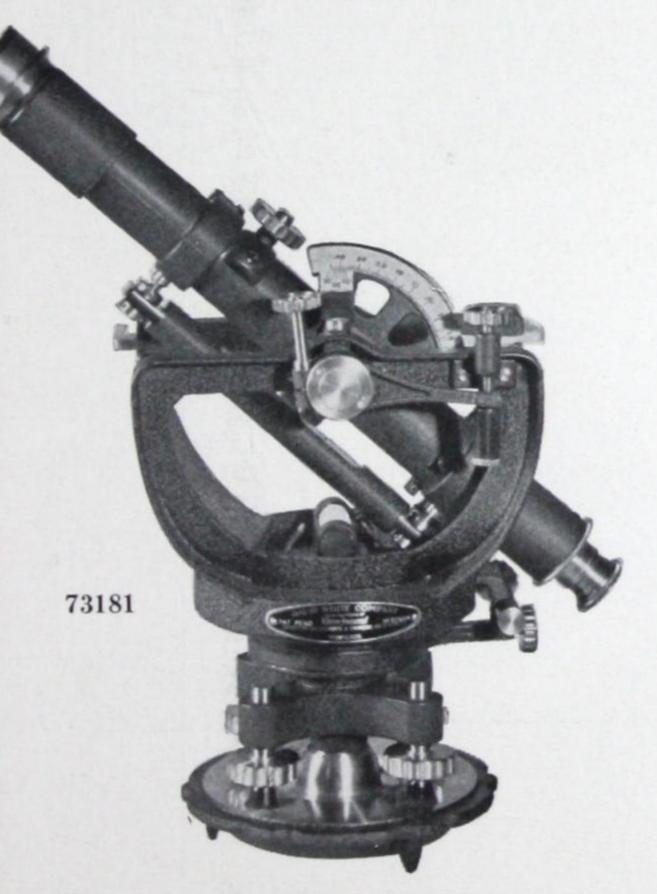
A REAL TRANSIT-LEVEL

ACCURATE-SIMPLE-RIGID-EFFICIENT

Can be instantly changed from level to transit or transit to level position without ag or fixing any parts, without disturbing its adjustments, without danger of dropping telescope or replacing it reversely.

Guaranteed accurate and foolproof; no technical knowledge required; easy to operno chance for error; always ready for use; no adjustments to worry about.

HAS MANY VARIED USES



In Transit Position

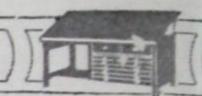
- Designed especially for heavy duty work in building and road construction.
- Finding differences in elevation.
- Determining grades for building.
- Laying out lots and foundations.
- Aligning foundation piers.
- Checking walls in construction.
- Obtaining angles of any desired degree.
- Interior leveling of floors, shafts, etc.

No. 73181 Transit-Level supersedes all other known Builders' leveling devices in ery one of their most vital points. The crossbar and wyes of the older type of combinant machine are supplanted by a single truss standard frame of entirely novel construct. This eliminates all parts which in other machines are exposed to damage and ultant inaccuracy.

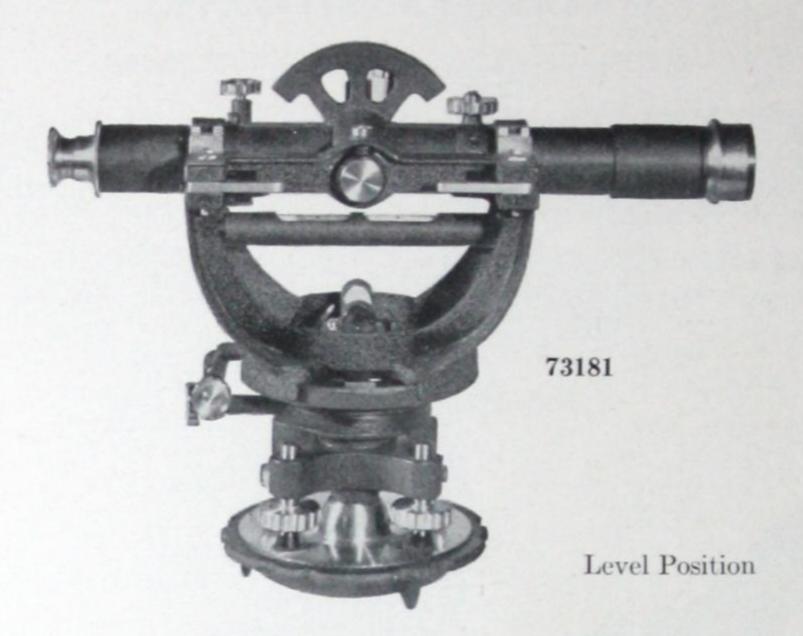
See Price List Inside Back Cover

Some Page 317 Johnson





TRANSIT-LEVEL



OUTSTANDING SPECIFICATIONS

- Telescope: 12" long. Erecting lens system of 25 power magnification, object glass 1½". Extra long, unobstructed spirit level to telescope. Equipped with cross hairs, adjusted by spiral eyepiece.
- Standards: External focusing cast integral with standard base. Improved bearings for telescope in transit position. Spirit level on standard plate.
- Horizontal Circle: Silvered 4½" divided to degrees numbered from 0 to 90 in quadrants and vernier to 5 minutes. Circle is guarded.
- Vertical Arc: 3" diameter reading to degrees. Easy to read.
- Clamp and Tangent Screw: Improved clamp and tangent screw for both the Vertical and Horizontal Motion.
- Leveling Head: Extra heavy with shifting center. Trivet style Leveling plate.
- Ball Bearing Race: A patented feature, insures perfect adjustment under the most severe conditions. Steel center with end thrust adjustment.
- Equipment: Fine hardwood carrying case, tripod, sunshade, adjusting pins, plumb bob, etc.
- Weight: Instrument 11 lbs., tripod 9 lbs.

73181 Transit-Level, in carrying case, complete with accessories and full-length
Split Leg Tripod

EXTRAS

73182 Extension Leg Tripod

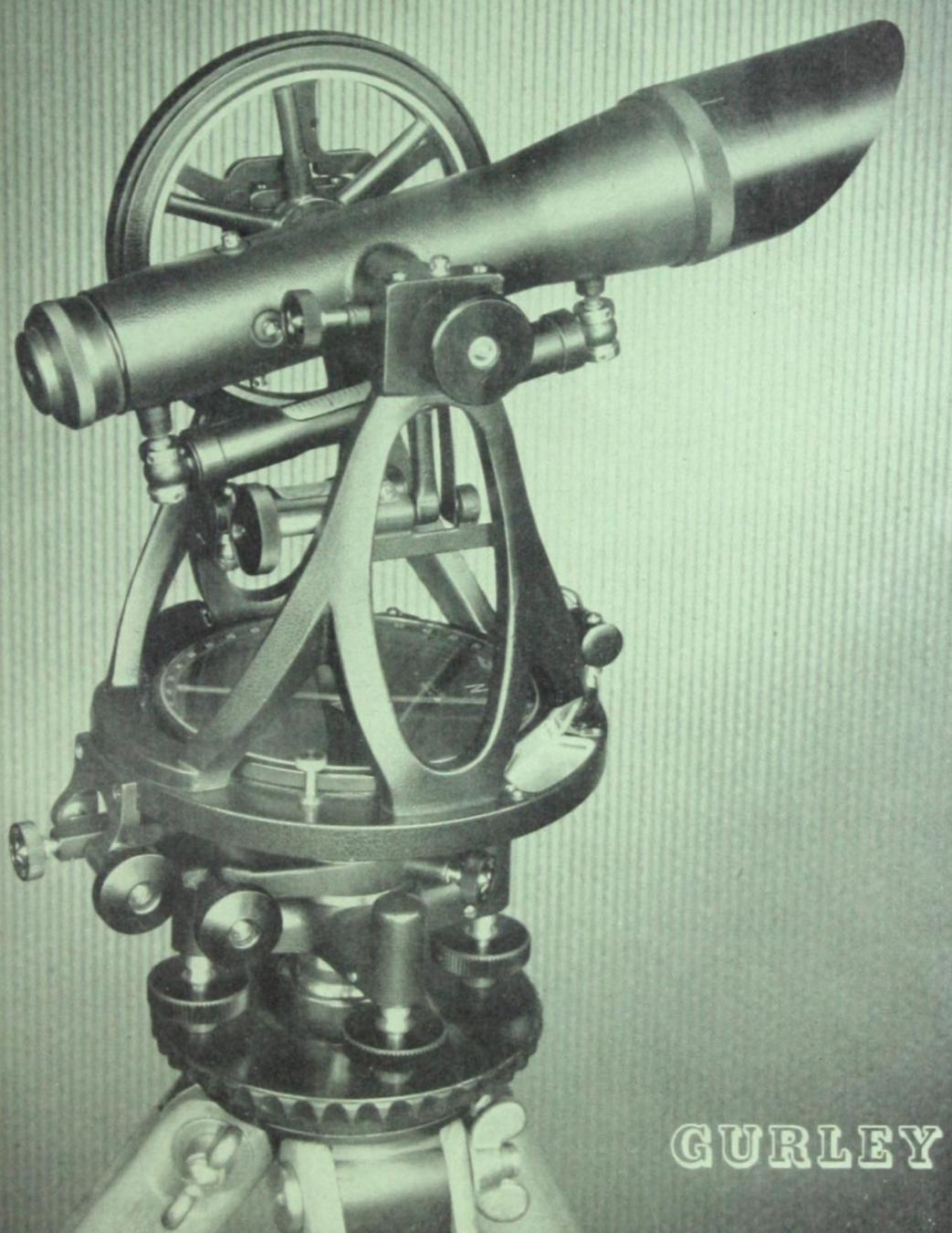
73183 Fixed Stadia Wires

73184 Compass

See Price List Inside Back Cover

PAGE 318 Johnson

TRANSITS AND LEVELS



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specificate treated special Lenses the Gumillion minimum mitting instrum

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GURLEY ENGINEERING INSTRUMENTS

Gurley Engineering Instruments are characterized by accuracy, implicity, durability, and ease and permanence of adjustment. They are signed by engineers who seek and understand the problems of the man the field. They are made by workmen of long experience, all parts in the factory, with the finest of equipment at their disposal.

Gurley uses only virgin alloys of bronze and aluminum held to rigid ecifications. Castings are made in the Gurley foundry and are heatered to remove internal strains. The rod, bar and tubing material is ecially selected and parts are likewise heat-treated where necessary. Enses, prisms, glass reticles and level vials are ground and polished in the Gurley optical shop using gages that indicate surface differences of a fillionth of an inch. All parts are made to close tolerances requiring the inimum fitting on assembly and many parts are interchangeable perfecting replacement by the field user or local repair shop. A Gurley strument spends most of its time in service.

Their distribution is world-wide, being sought by engineers of many tionalities because of their proven accuracy on important projects and pendability under all climatic conditions.

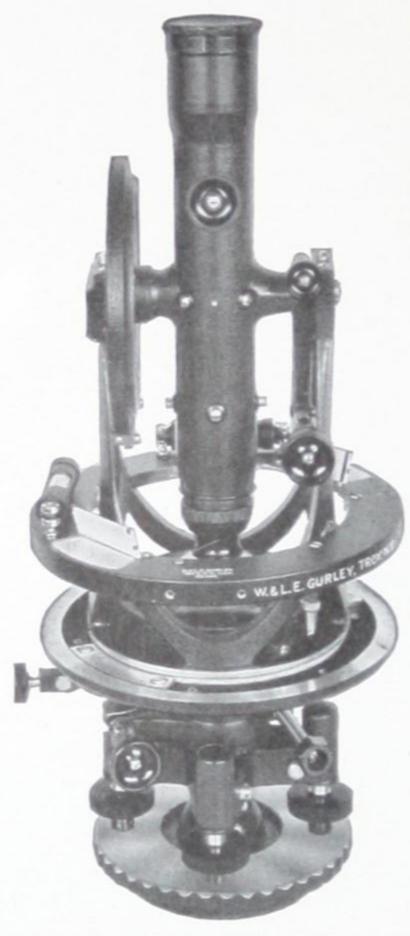
The instruments listed herein are in sufficient variety to meet invidual preferences, are all made to the same degree of precision and are itable for any type of surveying work up to the higher orders of geodetic curacy.

Instruments for First or Second Order Triangulation, Traversing or eveling are made to order only.

As always, Gurley Instruments are backed by an unqualified guarantee give satisfaction to the user and to make good any deficiency without st.



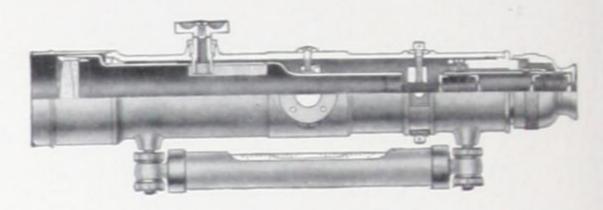
FEATURES OF **GURLEY TRANSITS**



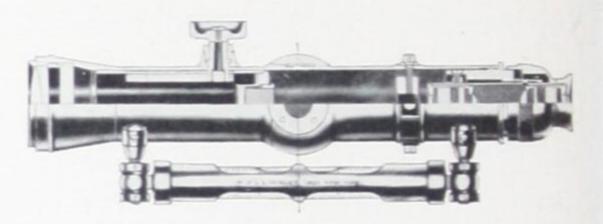
Cover guard to limb and verniers. Easily raised for cleaning limb and verniers. No need to take apart centers.



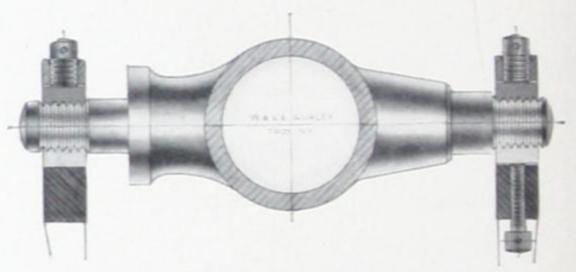
Extra large repeating centers of antifriction bronzes. Shifting center, 8 thread baseplate. Leveling screws with bakelite heads; removable for cleaning or replacement, without taking apart centers.



Gurley Inner-Slide Telescope, protecting objective slide throughout focusing range. Repairable bearings. Collimation accurately adjustable for all distances. Regularly furnished.



Gurley Internal-Focusing Telescope. Zero stadia constant. Furnished when specified, at no extra charge.



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Limb

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Levels shaped ness. of limit levels all tele

Multigroove bearings to telescope axis. No end play. Retain lubrication. Increase structural rigidity. Solidly attached cap, with adjustable friction bearings.

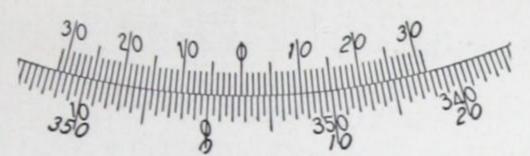


One-Piece Truss Standard and vernier plate, cast in one piece. Strength and rigidity with light weight. No Gurley transit is top-heavy.

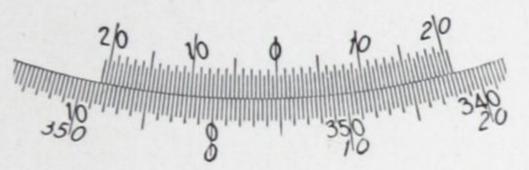




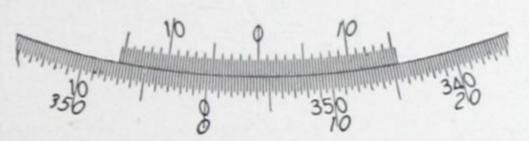
FEATURES OF GURLEY TRANSITS



Reading by verniers to 1 minute. Limb divided to 30 minutes.



Reading by verniers to 30 seconds. Limb divided to 20 minutes.



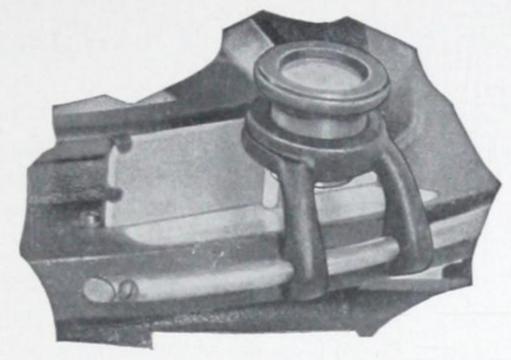
Reading by verniers to 20 seconds. Limb divided to 15 minutes.

Accurate and easily-read graduations, on nontarnishing, homogeneous ring.

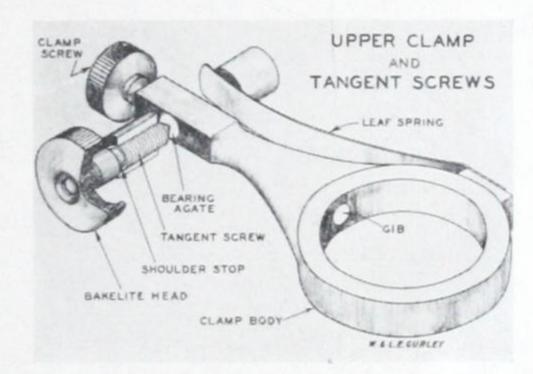
LIMB FIGURING

Limb IV, regularly furnished, as illustrated, in two rows, 0-360 both ways, inclined in direction of increase.

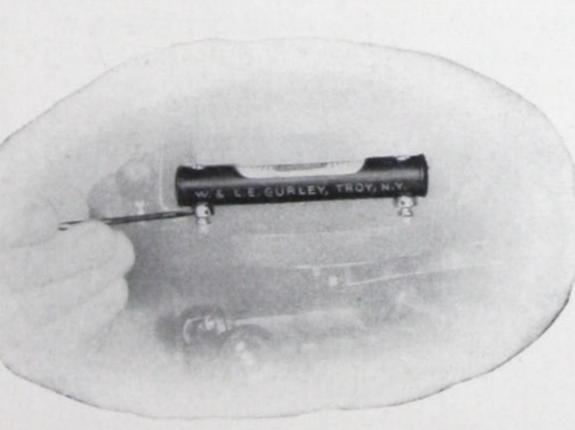
Optional, if ordered new, at same price, outer row, 0-360 clockwise, inner row 0-90 in quadrants. Specify as Limb I.



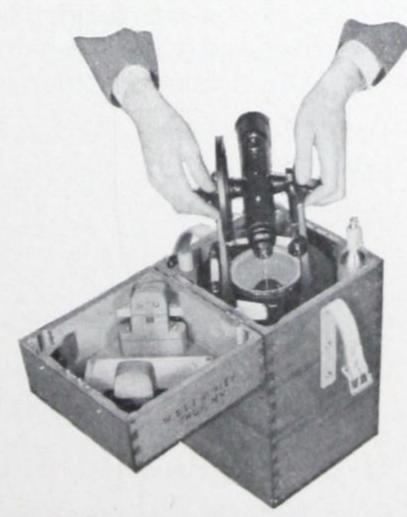
Focusing, adjustable microscope, magnifying 9x. Should be used with graduations reading finer than 1 minute, to prevent parallax errors. Glass over vernier flush with plate, waterproof. Reflectors to all plate verniers, except No. 110 Series



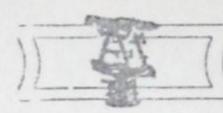
Precisely centered and fitted symmetrical clamp tangent screws finely fitted, threads protected from dirt and dust, with adjustable take-up for wear. Non-jamming. Flat leaf-type tangent springs give smooth and positive action. Agate in tangent arm prevents screw from boring into arm.



Level vials, circular at all cross-sections (barrel-shaped inside), machine-ground to optical smoothness. Sensitiveness commensurate with fineness of limb reading. New easy adjustment to plate levels. Reversion level regularly furnished on all telescopes.



Gurley top-opening box completely cradles the transit and helps maintain adjustment. Cushioned on springs. Easy to remove or replace instrument.





Telesc

Gradu

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Tripod

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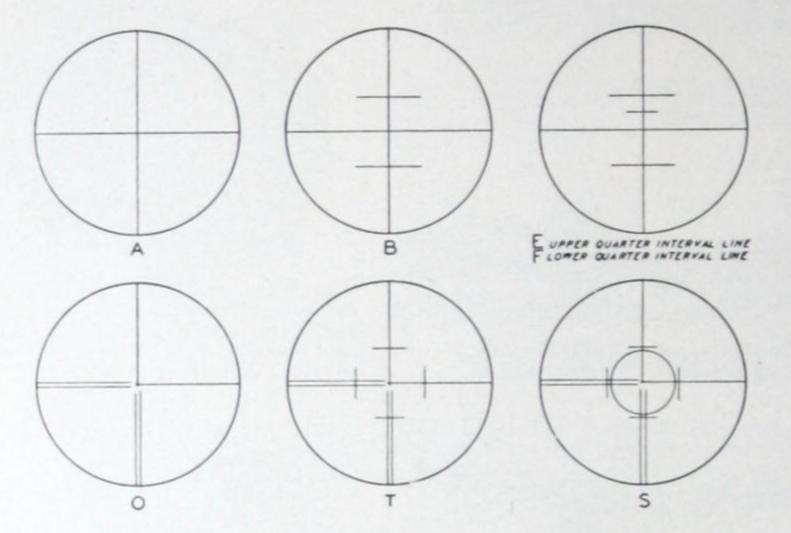
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FEATURES OF GURLEY TRANSITS

Glass Reticles



An improvement in the telescopes of all Gurley Engineering Instruments is the adoption of glass reticles, which replace the fine platinum wires formerly used. With the glass reticle, breakage is unlikely, the lines are uniform, are accurately spaced, and the stadia lines are very easy to identify because they do not go to the edge of the field of view. For this reason, the "disappearing stadia" reticle, and the diagonal reticle, are unnecessary and are no longer furnished.

The reticle is made of thin glass, ground and polished optically flat, and precisely ruled. It may be cleaned if necessary.

Description of Reticle Patterns

If one of the reticles illustrated is desired in place of the reticle regularly supplied with the Transit, add number 155 and suffix-letter of the reticle to the catalog number of the instrument; as No. 82R-155T.

- A. Plain cross-lines. For Levels.....
- B. Cross-lines and stadia lines, spaced 1:100. Furnished with all Transits, except No. 112-RT.....
- E. Quarter-interval stadia lines in upper field, added to "B" permitting stadia readings of 1:400. For Alidades.....
- O. Parallel horizontal and vertical lines combined with regular cross-lines.

 Improve accuracy of pointing. Recommended for triangulation and for stellar observations.....
- T. Stadia lines spaced 1:100 horizontally and vertically, added to "O"....
- S. Solar reticle (furnished with No. 112-RT Solar Transit). A combination of "O" and "T" with a circle 15' 45" radius for centering the sun's image.

SPECIFICATIONS OF GURLEY TRANSITS

- **Telescopes:** Erecting, Gurley Inner-slide focusing, unless otherwise specified. Inverting optics, internal focusing, and lower magnification, optional. Unusually large aperture and field, with close minimum focusing. Superior optics of Gurley manufacture.
- Graduations: Fine, clean-cut, black filled lines on non-tarnishing surface; figured 0° to 360° both ways, figures inclined in direction of increase; with two opposite double verniers; attached focusing microscopes for graduations reading 20 seconds.
- Vertical Limb: 5 inches diameter, divided to 30 minutes, reading to one minute, figured in quadrants; with removable duralumin type alloy guard. Vertical limb may be omitted on any transit.
- Compass: Flat bar needle, 3½ inches long, (4½ inches on No. 82R, sapphire jewel bearing, crystal glass cover set in screw bezel ring, waterproof, movable variation circle graduated to read to half degrees (vernier reading to 1 minute on No. 82R). Compass may be omitted on all transits, except No. 82R.
- Level Vials: Unusually long telescope level, positively adjusted by opposing capstan nuts, vial of reversion type, with bubble readable in under or over positions, greatly simplifying adjustment. Sensitiveness 30 to 50 seconds, depending upon fineness of limb reading. Side and transverse vials with new easy adjusting mounting, sensitiveness 80 seconds. All vials ground to curvature.
- Equipment: Top-opening mahogany box with hooks and padded carrying strap; adjustable spring packing blocks to cradle transit and to protect adjustments during transportation. 14 ounce plummet, screw driver, adjusting pins, needle and bottom wrench, 1" magnifier, oil can, sunshade, Cox Stadia Computer, Adjustment Booklet.
- Tripod: Fixed-length ash legs, 58 inches long, 8 thread bronze tripod head, aluminum cap. Unusually rigid. Standard weight, 12 lb. (402), furnished regularly with transits Nos. 52FR and 132R. Extra-heavy 14½ lb. (402-S) furnished with Nos. 52FR and 132R when graduated to 30 seconds or 20 seconds; and extra with other models. Extension-leg tripod 10½ lb. (407) furnished regularly with transits Nos. 82R and 112R; and extra with Nos. 52FR and 132R.
- Materials: Centers and all bearings of bronze; structural parts of high strength duralumin type alloys. Nickel alloy screws and bakelite heads.

NOTE—Numbers shown in (—) are manufacturer's numbers





GURLEY PRECISE TRANSITS



52-FR, 52-FRH-30 and 52-FRH-20

Municipal Engineering Private Engineering Highway Location Dams, Bridges, Railroads **Industrial Plants** Sub-divisions



EACH

73241 (52-FR)

61/4" Limb, reading to 1 minute; 12-inch telescope, internal focusing, 27x, 1.57-inch aperture, minimum focus 61/4 ft. Reversion Telescope Bubble. Full circle and guard. 31/2-inch Needle. Weight 133/4 lbs. Tripod (402) 12 lbs.....

73242 (52-FRH-30) Same as above, but Horizontal Limb only reading to 30 Seconds and (402S) Extra Rigid Tripod.....

73243 (52-FRH-20) Same as 73242, but Horizontal Limb only reading to 20 Seconds, attached focusing Microscopes and (402S) Extra Rigid Tripod

NOTE—Numbers shown in (—) are manufacturer's numbers

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New magnetic

levelling 73251 (82 mini

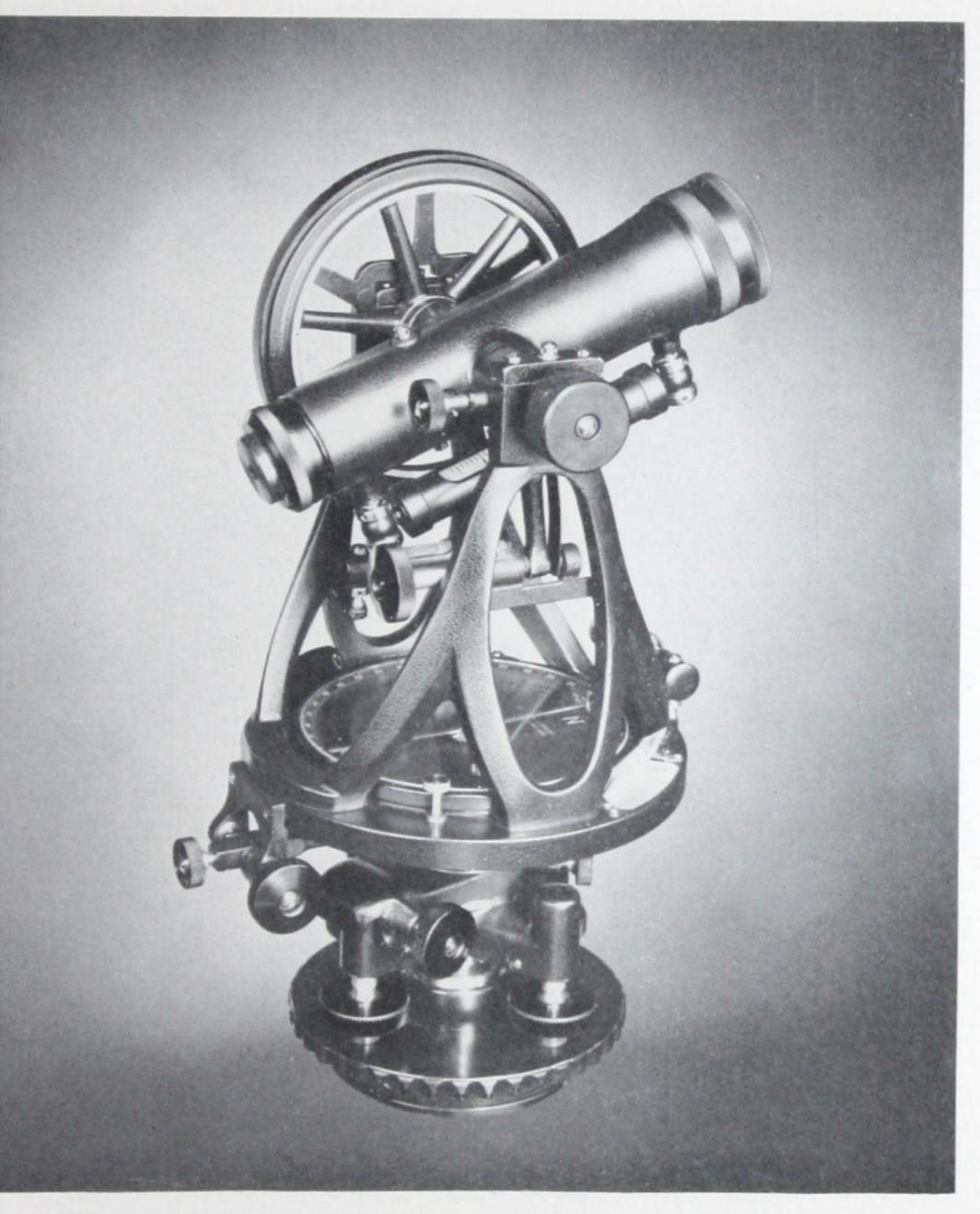
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GURLEY PRECISE TRANSITS



73251 — GURLEY "MOUNTAIN AND MINING" PRECISE TRANSITS

New improved model provides a longer compass needle with vernier for setting off gnetic declination to single minutes, a firmer levelling base with wider spread to the elling screws and a greatly strengthened One Piece Truss Standard.

EACH

(82-R) 5.65" Limb, reading to 1 minute; 10" telescope, 22x; 1.57" aperature, minimum focus 6½ ft. Reversion Telescope Bubble. Full Circle and Guard reading to 1 minute. 4½" needle with movable variation circle and vernier reading to 1 minute. Extension Tripod. Weight 11½ lbs. Tripod 10½ lbs. (83-R) Same as above but with Vertical Arc instead of Full Circle......

NOTE-Numbers shown in (-) are manufacturer's numbers

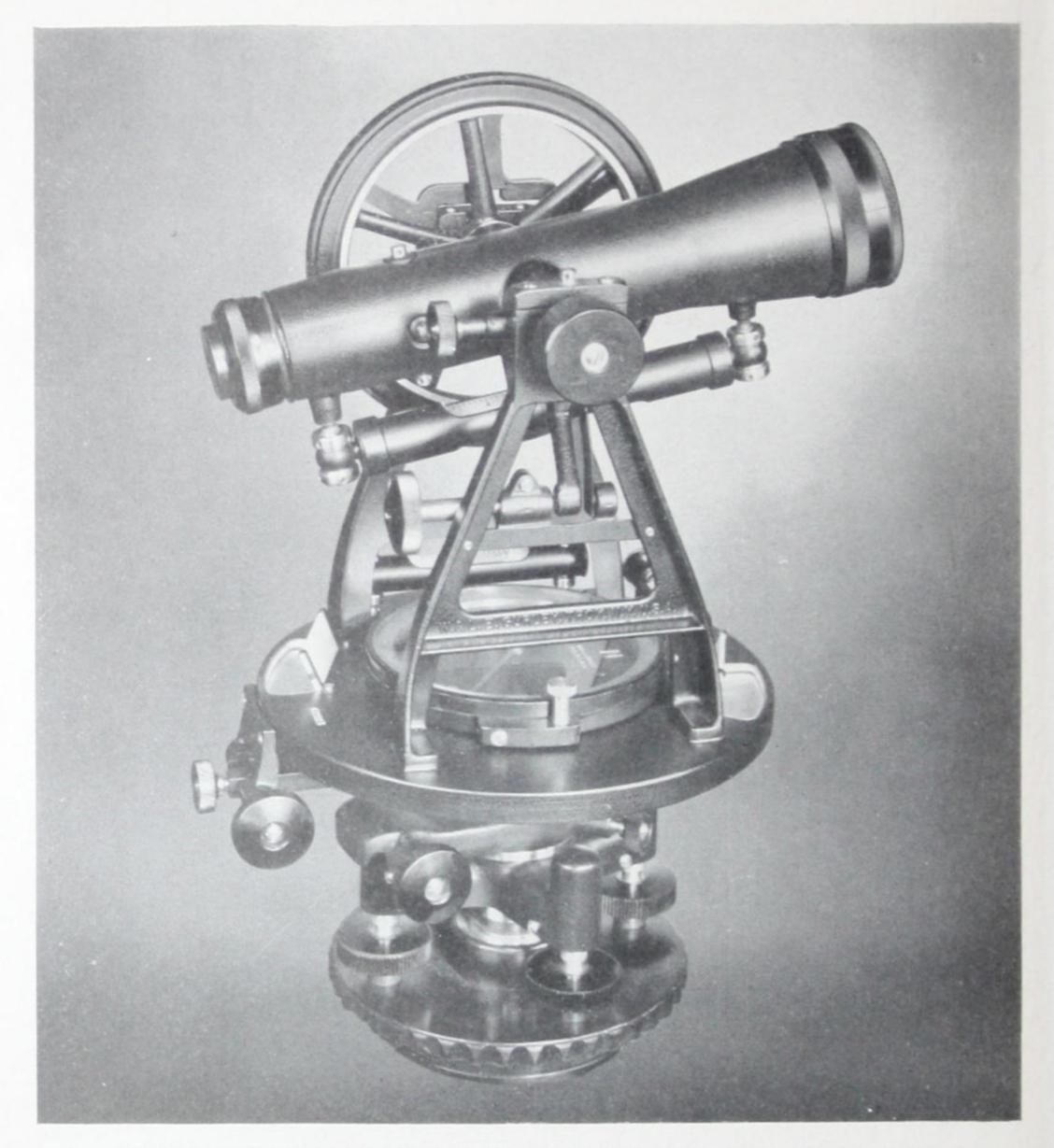
See Price List Inside Back Cover

mone Page 325 Johnson





GURLEY PRECISE TRANSITS



73261—"STANDARD" PRECISE TRANSITS ENGINEERS MODEL

Highways, Roads, Streets, Sewers, Farms and Lots, Buildings, Mines, Tunnels, Dams, Bridges, Railroads, Private Engineering Stadia Surveys

EACH

73271

- 73261 (132-R) 6½" Horizontal Limb reading to 1 minute. 10" telescope, 22x; 1.57 inch aperture, minimum focus 6½ ft. Reversion Telescope Bubble, Full Circle and Guard, 3½" needle. 732891 (492) Standard Tripod. Weight 12½ lbs., Tripod 12 lbs.
- 73262 (132HR30) Same as 73261 but with Horizontal Limb only reading to 30 seconds, and 732802 (4028) Extra Rigid Tripod.....
- 73263 (132HR20) Same as 73261 but with Horizontal Limb only reading to 20 seconds, attached focusing Microscopes and 732802 (4028) Extra Rigid Tripod.....

NOTE—Numbers shown in (—) are manufacturer's numbers

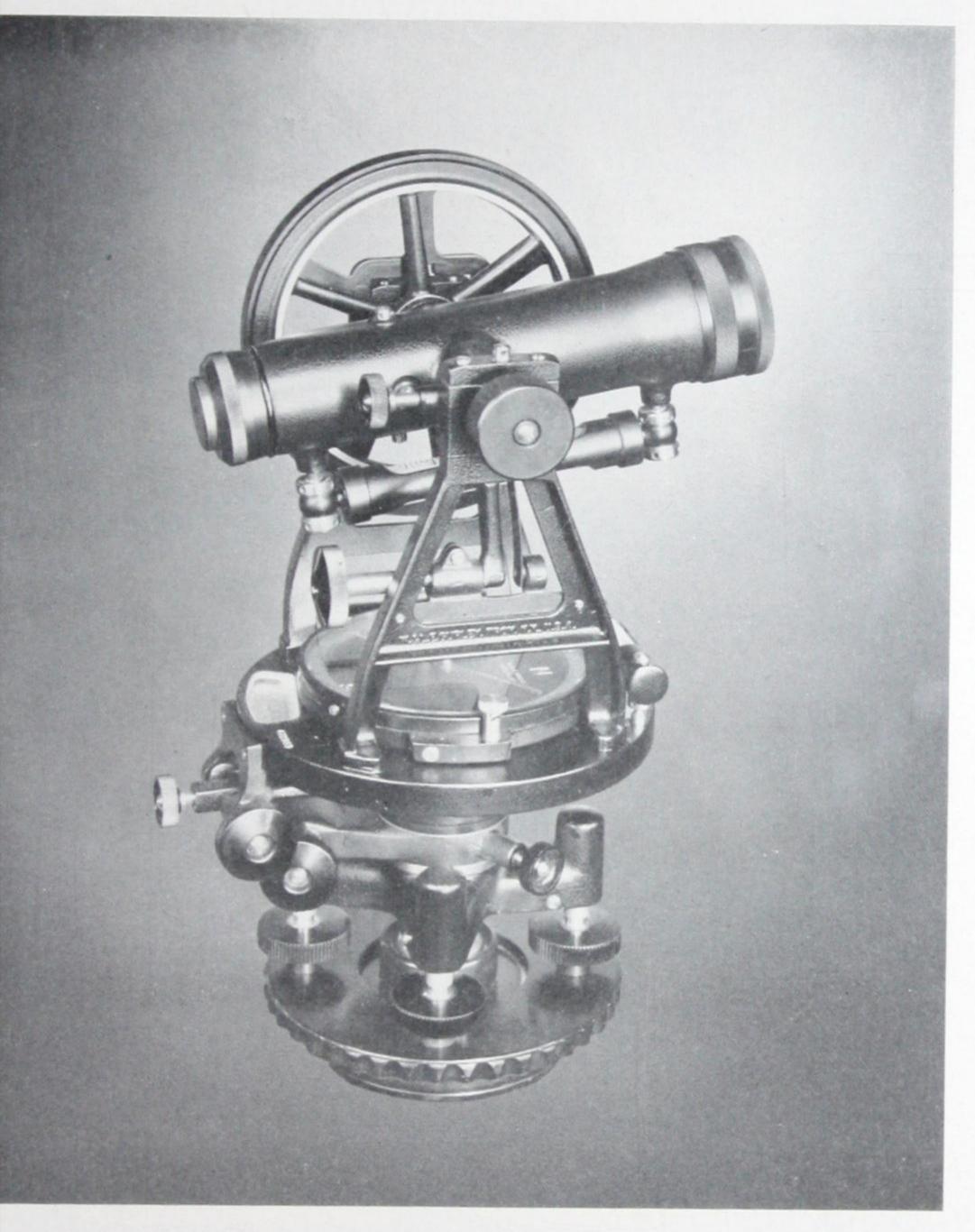
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GURLEY PRECISE TRANSITS



73271 — "STANDARD" PRECISE TRANSITS — Reconnoissance Model General Construction, Roads, Streets, Sewers, Buildings and Plants, Stadia Surveys, Farm Surveys, Grading, Mines

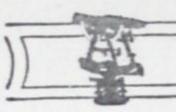
EACH

271 (112R) 5½" Limb, reading to one minute; 8½" telescope, 17x, 1.37" aperture, minimum focus 5½ ft. Reversion Telescope Bubble, Full Circle and Guard, reading to 1 minute, 3½" needle. 732803 (407) Extension Tripod. Weight 10 lbs., Tripod 10½ lbs.

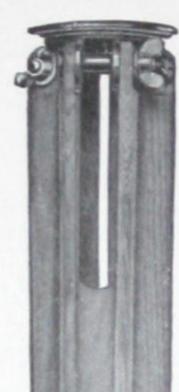
NOTE—Numbers shown in (—) are manufacturer's numbers

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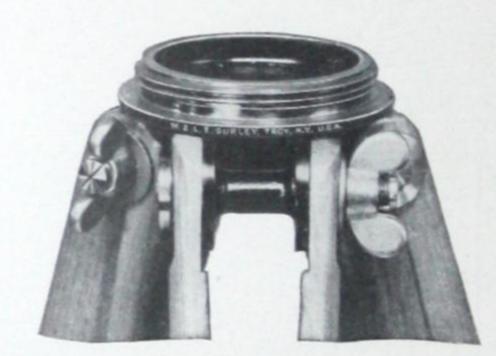


GURLEY TRIPODS

Gurley Tripods provide an exceedingly rigid base for the Transit or Level without unnecessary weight. The legs of fixed-length Tripods are of I-section, bolted to the Tripod head, and have ample bearing surface. The bolts are of large diameter, and the leg is tightened by means of a wing nut and washer. A keeper screw in the end of the bolt prevents loss of the wing nut. Heads are of bronze, with cap to protect the threads. The U.S. Standard tripod thread is used in all Gurley Tripods. This thread (3½ in. diameter—8 threads per inch) was evolved under the guidance of the National Bureau of Standards, has been regularly used on Gurley Instruments since 1930, and is usually required in U. S. Government specifications.

Fixed-length legs are of ash, extension legs of ash and maple. The legs are equipped with a well-fitted steel point, and will also be equipped with spurs if specified in ordering. Extension legs should be selected only for convenience, as they are not as rigid as fixed-length legs. For this reason, extension leg Tripods are only supplied regularly with Light Mountain and Reconnoissance Transits.

Refer to detailed specifications for the Tripod furnished with the instrument.



DESCRIPTION OF TRIPODS

EACH 732801 (402) Standard Tripod, fixed-length, I section legs, 58" long, made of specially selected ash. Forged pointed steel shoe pinned to leg. Bronze head, having standard threads (31/2"-8). Large bolts with knurled bearing to head, washers and wing nuts, with keeper screws. Light metal cap. Strap with buckle. Weight about 12 pounds.....

732802 (402-S) Heavy Tripod, like No. 402, but with extra-heavy and extra-rigid fixed-length legs. Weight about 14½ pounds.....

732803 (407) Standard Extension Tripod, extension legs of hardwood, 57" long, closing to 35". Forged steel shoe pinned to leg, points may be reversed. Head same as No. (402). Light metal cap. Strap with buckle. Weight about 10½ pounds.....

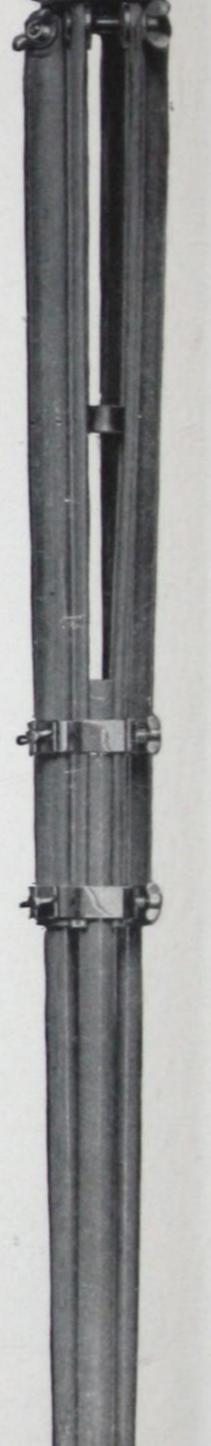
732804 (409) Mining Extension Tripod, same as No. 407 Standard Extension Tripod, except 36" long, closing to 22". Weight about 9 pounds.

	No Charge
732805	Spurs on Tripod legs, when specially ordered
732806	Single Leg, extension
732807	Single Leg, fixed-length
732808	Tripod Cap
732809	Tripod Head
732810	Clamp for extension tripod leg
732811	Tripod bolt, washer and wing nut

NOTE-Numbers shown in (-) are manufacturers' numbers

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PAGE 328 Person



No. 732803 Standard Tripod with extension legs.

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STANDAL PRICE.

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No. 732801 Standard Tripod With fixed-length legs.





GURLEY ALIDADES

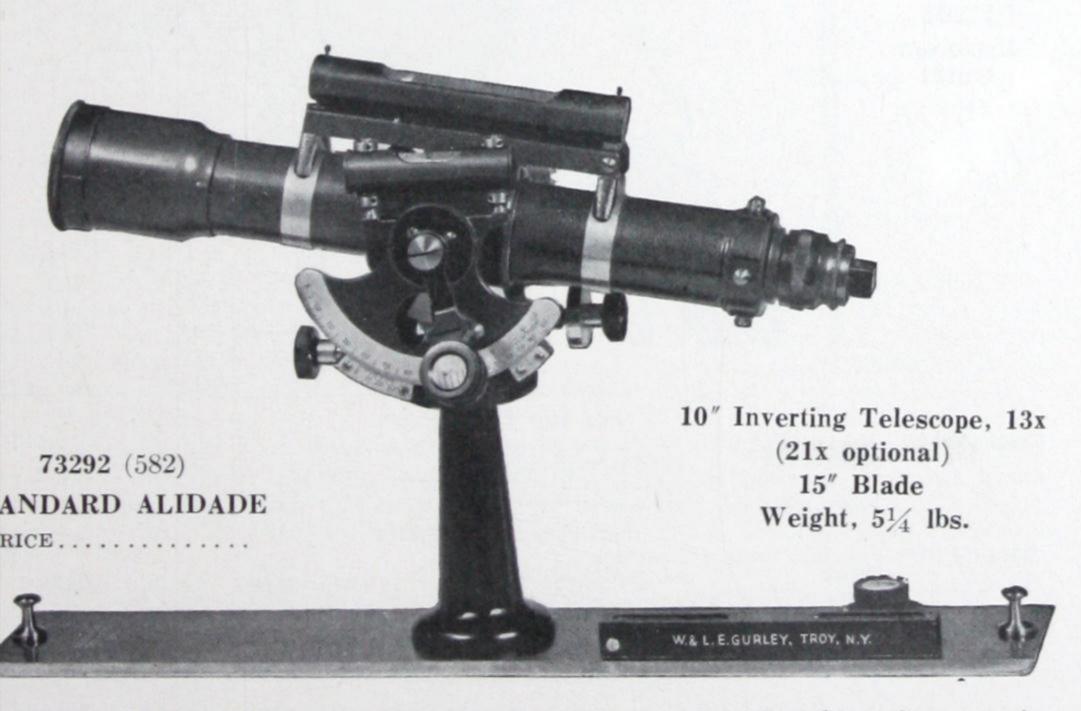
Gurley alidades are characterized by fine optics, durability, and ease and permanence adjustment. The cross and stadia wires are ruled on glass, with additional quarter-terval line on all models. Axis bearings are multi-groove. The vertical arc reads to agle minutes, and also has Beaman Stadia Arc graduations. A gradienter, an attached ding microscope to the arc, a control level, and striding level, and 4" dustproof box mpass, are supplied.

Gurley plane table boards are made in a number of sizes, and are used with the

hnson Plane Table Movement, with plain or extension tripod.



A compact instrument which has achieved world-wide use by oil geologists, tographers, and exploration parties.



This model is used for general plane table mapping, such as the taking of topography be used in establishing grades, computing "cuts" and "fills," mapping drainage areas, rk development, etc.

For further information covering Alidades and Plane Tables, write for catalog.

NOTE—Numbers shown in (—) are manufacturer's numbers

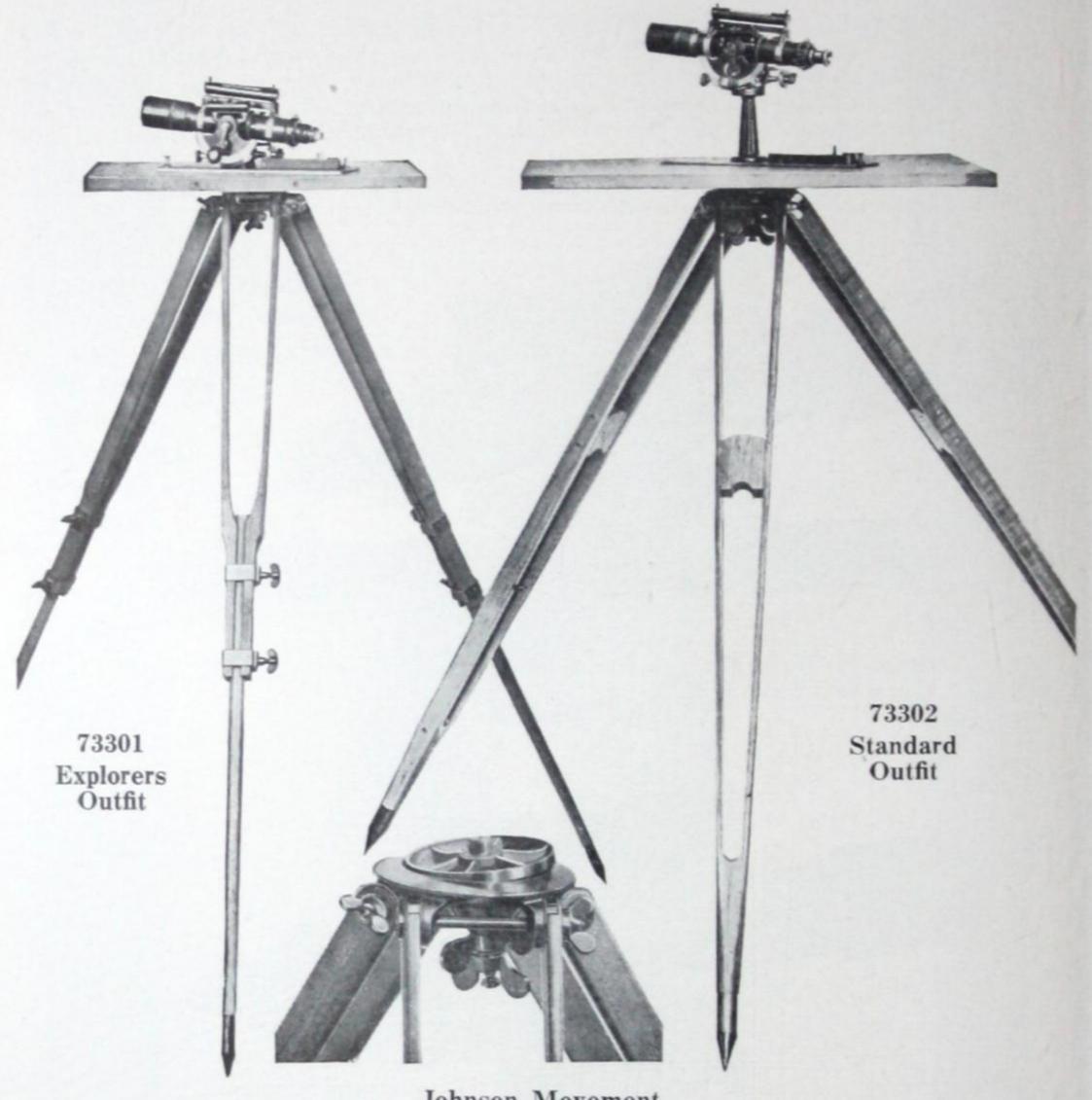
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GURLEY PLANE TABLE OUTFITS



Johnson Movement For the Prospector

	Tot the Prospector	
73301 (580-T)	Explorers Outfit— Consisting of:	EACH
	73291 Explorers Alidade.	
	Light Johnson Movement, with extension leg Tripod.	
	Board, 15" x 15". Canvas Case with shoulder strap.	
	For the Topographer	
73302 (582-D)	Standard Outfit—Consisting of:	EACH
A STATE OF THE PARTY OF THE PAR	72202	

73302 (582-D) Standard Outfit—Consisting of:
73292 Standard Alidade.
Johnson Movement, with fixed-length leg Tripod.
Board, 31" x 24". Canvas Case with shoulder strap.

PLANE TABLE MOVEMENTS
Johnson Movement with Split Leg Tripods

73303 (569) 73304 (570) 73305 (572)	Johnson Movement with extra heavy split leg tripod, weight about 12 lbs Johnson Movement with regular split leg tripod, weight about 9¾ lbs Johnson Light Weight Movement, with light weight split leg tripod, weight about 7½ lbs
	* /2 105

Johnson Movement with Extension Leg Tripods

Johnson Movement with heavy extension leg tripod, weight about 11¾ lbs.....

Johnson Light Weight Movement, with light weight extension leg tripod, weight about 8½ lbs.....

NOTE—Numbers shown in (—) are manufacturer's numbers

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PAGE 330 PAGE

The Movement the 7330's screw plans paper, extraverse Boar construct

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Size 24 x

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Price construct available obtained

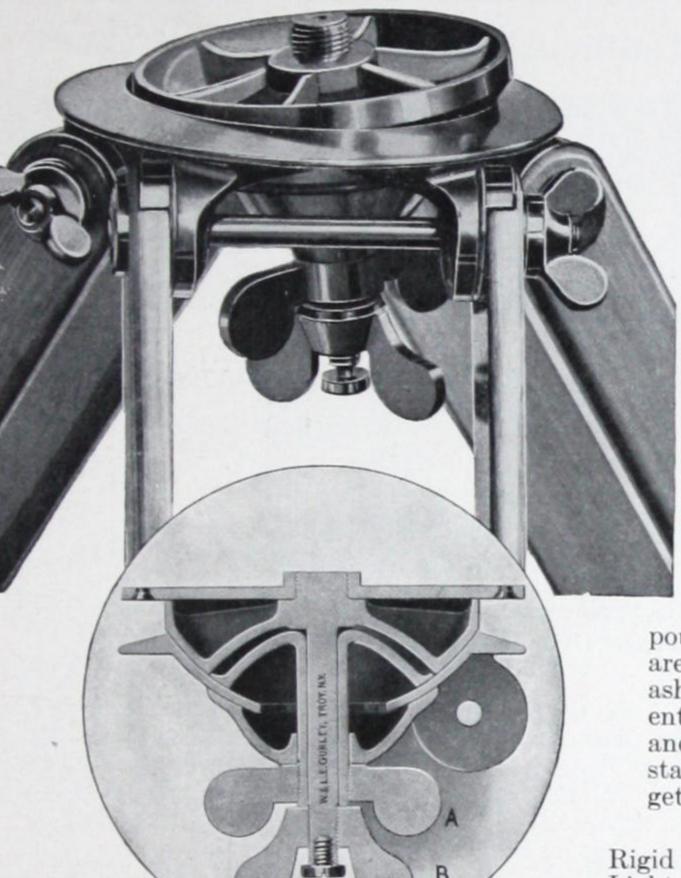
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Sizes to t





JOHNSON PLANE TABLE MOVEMENT



This portable plane table movement, a product of the experience of the U. S. Geological Survey, combines in a most satisfactory manner the characteristics listed below.

The movement consists of two cups accurately lapped together and arranged so that the plane table board can be readily leveled and rotated in azimuth. Large wing nuts clamp the board in position.

The movement, complete with tripod, weighs about nine pounds. The split tripod legs are made of straight-grained ash. The construction of the entire tripod insures strength and rigidity, and it is capable of standing rough usage without getting out of order.

Features

Rigid Support
Light Weight
Quickly Leveled
Easily Oriented
Steady in Wind

Accurate
Convenient
Durable Parts
Standardized
Steady in Wind

PLANE TABLE BOARDS

The following listed Drawing Boards may be used with either of the Plane Table Iovements, excepting the 31" x 24" size, which we recommend should not be used with he 73307 Special Light Weight Johnson Movement. All Boards are fitted with brass crew plate on under side and with eight clamp screws and sockets for holding down the aper, except 733105 which has four. No. 733106 is fitted with springboard plate for raverse movement.

Boards having a catalog number with suffix "X", as No. 573-X, are especially onstructed for use in tropical climates, having expansion battens or cleats to prevent varping. These are regularly carried in stock in two sizes, 24" x 31" and 18" x 24", as sted below, but the cleated board can be made to order in the other sizes at an extra rice.

733101 733102 733103 733104 733105 733106 (573) (573X) (573A) (573AX) (573B) (573T) ize 24 x 31 24 x 31 18 x 24 18 x 24 15 x 15

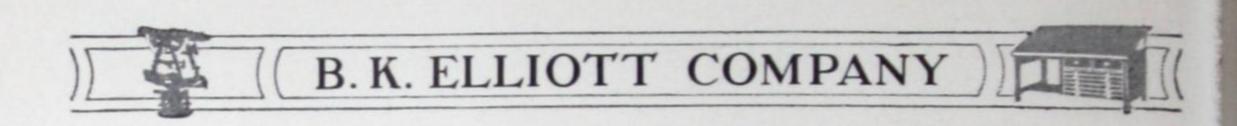
Prices for Plane Table Boards with Screw Plate Fitted vary according to sizes and onstruction features. Carrying Cases in Flexible Canvas with Shoulder Straps are vailable for all board sizes. Rigid Basswood, Canvas Covered, Carrying Cases can be btained for all sizes.

Drawing Paper in white, buff and green, single or double mounted, available in izes to fit boards.

NOTE-Numbers shown in (-) are manufacturers' numbers

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GURLEY PRECISE TRANSITS

Optional Modifications of New Transits

The following changes will be made without charge, on new Transits at the time they are ordered:

Graduations: Horizontal limb figured 0°-90° inner row, 0°-360° outer row. Designated as "Limb I".

Internal Focus Telescope: Eliminating stadia constant. Indicated by letter "F" added to catalog number.

Magnification: Telescopes can be furnished with extra eyepieces, giving higher or lower magnifying power; or an eyepiece of a different power will be furnished in place of the regular one, without additional charge. List supplied on request.

Spurs To Tripod Points.

Vertical Arc (half circle), replacing full circle and guard.

Attachments and Extras for Gurley Transits

The following list of prices applies only to attachments and extras when they are to be added to a new instrument at the Factory.

	Еасн	Each
733201	(149) Beaman Stadia Arc (specify by suffix letter B, as No. 82-RB)	733208 (146) Reversion vial in Telescope Level, if not de- sired, deduct
733202	(168) Diagonal Prism with darkener, for observing sun	Special Graduations:
733203	(169) Eyepiece Cap with darkener glass in shutter	733209 (185-C) Graduation of Horizontal Limb to read to 30 seconds
733204	(150) Gradienter (specify by suffix letter G as No. 132-G)	733210 (185-B) Graduation of
733205	(180) Magnifier with joint- ed arm for reading vernier.	Horizontal Limb to read to 20 seconds
733206	(181) Microscopes, focus- ing, 9x, for reading verni- ers, per pair (not on Light	733211 (187-C) Graduation of Vertical Limb to read to 30 seconds
	Mountain or Explorers Models)	733212 (187-B) Graduation of Vertical Limb to read to
733207	(165) Reflector for illumi- nating crosswires	20 seconds
	nating crosswires	733213 (489) Waterproof Hood

Attachments for Gurley Levels

733214 (188) Level Vial, Sensi-	733215 (165) Reflector, for illumi-
uation (2 mm.) instead of	733216 (155-B) Fixed stadia lines (added to new Level)
regular vial, extra	733217 (487) Waterproof Hood

NOTE—Numbers shown in (—) are manufacturer's numbers

See Price List Inside Back Cover

PAGE 332 Johnson

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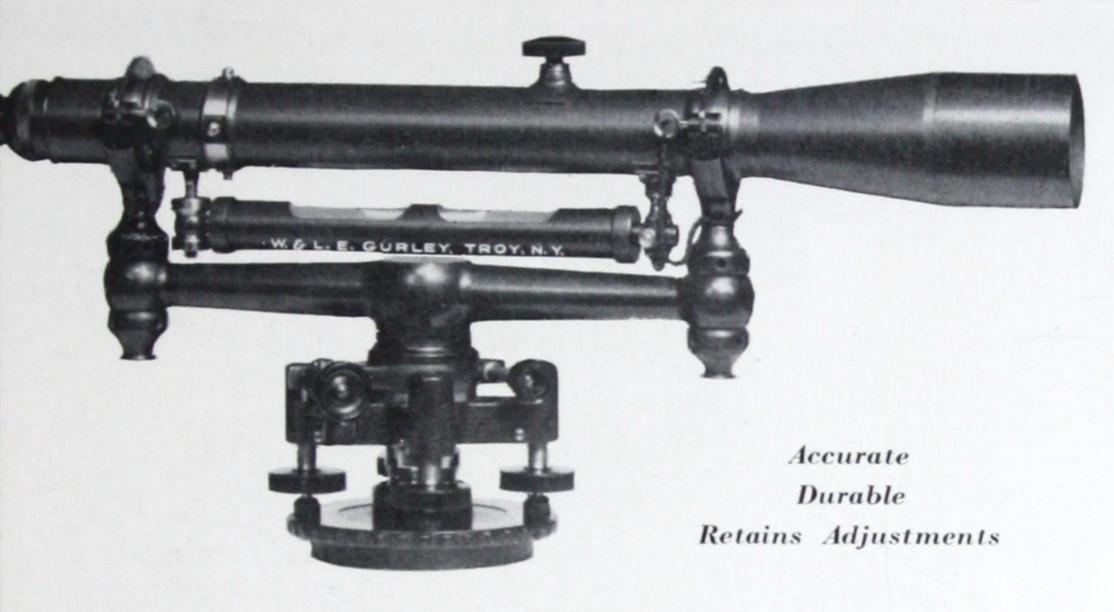
73331 (3

73332 (3

3332



GURLEY ENGINEERS' WYE LEVELS



To engineers everywhere, the Gurley Wye Level is standard. The performance of this instrument over the last one hundred years is its best recommendation.

Telescope: About 18" long. Sharp definition, flat field of view. Image erect. Internal focusing. Sunshade. Cross lines ruled on glass reticle.

Level Vial: Finely ground, sensitive, and uniform in movement. Workable length of bubble under wide range of temperature. Mounted in rigid case, positively adjusted by opposing capstan nuts.

Bar and Wyes: Rigid and strong bar. Telescope wye supports are adjustable vertically by opposing large capstan nuts. One wye clip fitted with stop to maintain cross lines in true horizontal and vertical position.

Centers: Long tapered spindle and socket, ground, lapped and perfectly fitted. Free-running at all temperatures.

Improved Clamp and Tangent: Threads of tangent screw not exposed to dust at any normal working position. A shoulder on the stem prevents jamming threads. Take-up adjustment to tangent screw nut compensates for wear. The tangent screw point thrusts against an agate bearing, for smoothness and long life.

Removable Leveling Screws: The leveling screws are fitted to bushings, which are clamped in the leveling head. Screw and bushing are removable for cleaning without removing the base plate. Worn or jammed screws can be replaced economically in the field.

Tripod: (402) Standard Tripod having fixed-length legs, 58" long, of selected white ash; forged steel shoes. Standard 3½" -8 thread to tripod head; (407) Extension-leg Tripod may be furnished in place of (402) at additional charge.

Equipment: Hard wood carrying case with hooks and strap, with sunshade, adjusting pins, screw driver, oil, center wrench, and instruction book.

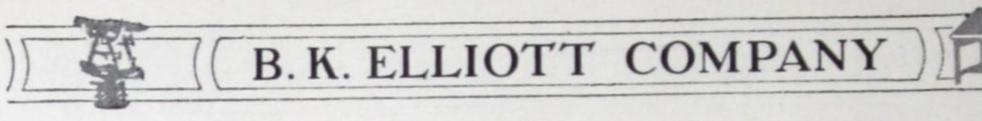
73331 (377-F) Gurley Engineers Wye Level, 18" telescope, internal focusing, magnifying 38x, objective aperture 1.69", minimum focus about 9 ft. Telescope level 83%" long, sensitivity of bubble about 25 sec. per 2 mm. graduation. Weight, of Level 13 lbs., of Tripod 11½ lbs.

73332 (375-F) Engineers Wye Level; 18" telescope, internal focusing, magnifying 38x, objective aperture 1.69", minimum focus about 9 ft. Telescope level 8\[^3\[^8\]" long, sensitivity of bubble 10-15 sec. per 2 mm. graduation. Weight: of Level 13 lbs. of Tripod 11\[^1\[^2\] lbs.

NOTE—Numbers shown in (—) are manufacturer's numbers

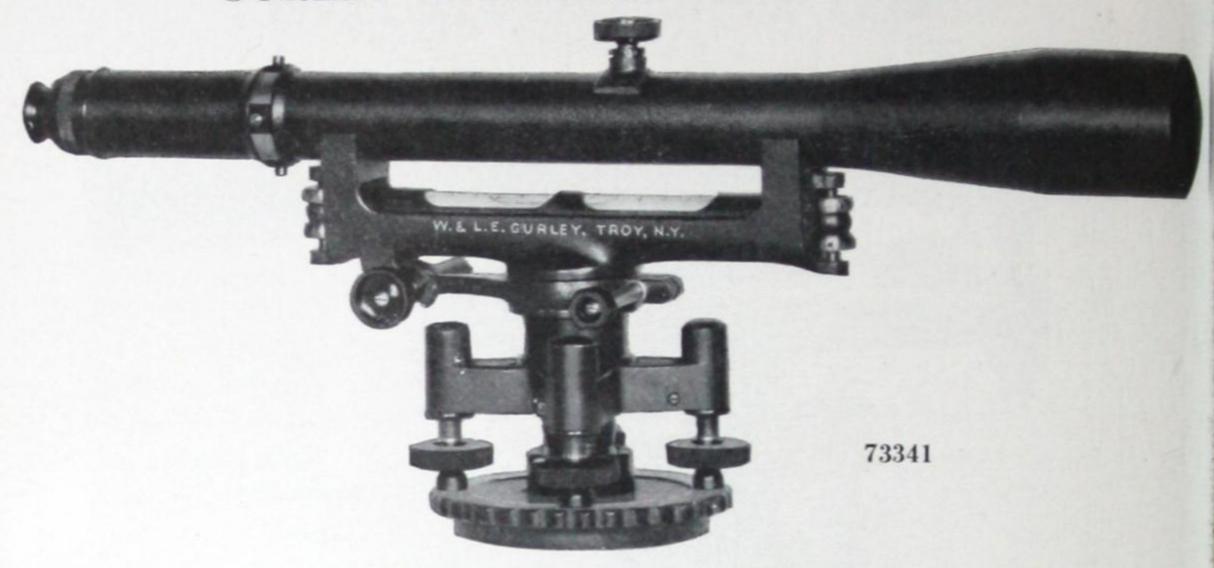
See Price List Inside Back Cover

MAGE 333 JOHN





GURLEY ENGINEERS' DUMPY LEVEL



The Gurley Engineers' Dumpy Level is frequently preferred for use on construction work. There are fewer adjustments to the dumpy level than the wye level, and hence the dumpy level will retain adjustments when rough handling cannot be avoided.

Telescope: About 18 inches long. Sharp definition, flat field of view. Image erect. Internal focusing. Sunshade. Cross lines ruled on glass reticle.

Level Vial: Finely ground, sensitive and uniform in movement. Workable length of bubble under wide range of temperatures. Vial case adjustable vertically by opposing capstan nuts.

Centers: Long, tapered spindle and socket. Ground, lapped, and perfectly fitted. Free-running at all temperatures

fectly fitted. Free-running at all temperatures.

Improved Clamp and Tangent: Threads of tangent screw not exposed to dust at any normal position. Shoulder on stem prevents jamming threads. Take-up adjustment to tangent screw nut to compensate for wear. Tangent screw point thrusts against agate bearing for long wear and smooth motion.

Removable Leveling Screws: Leveling Screws are fitted to bushings which are clamped in the leveling head. The screw and bushing can be removed for cleaning without removing the bottom plate.

Tripod: (402) Standard Tripod, having fixed-length legs, 58 inches long. Standard 3½ inches—8 thread. Extension-leg Tripod (407) can be supplied in place of Fixed-length Tripod for additional charge.

Equipment: Hardwood carrying case with hooks and strap, containing sunshade, adjusting pins, screw driver, oil, center wrench and instruction book.

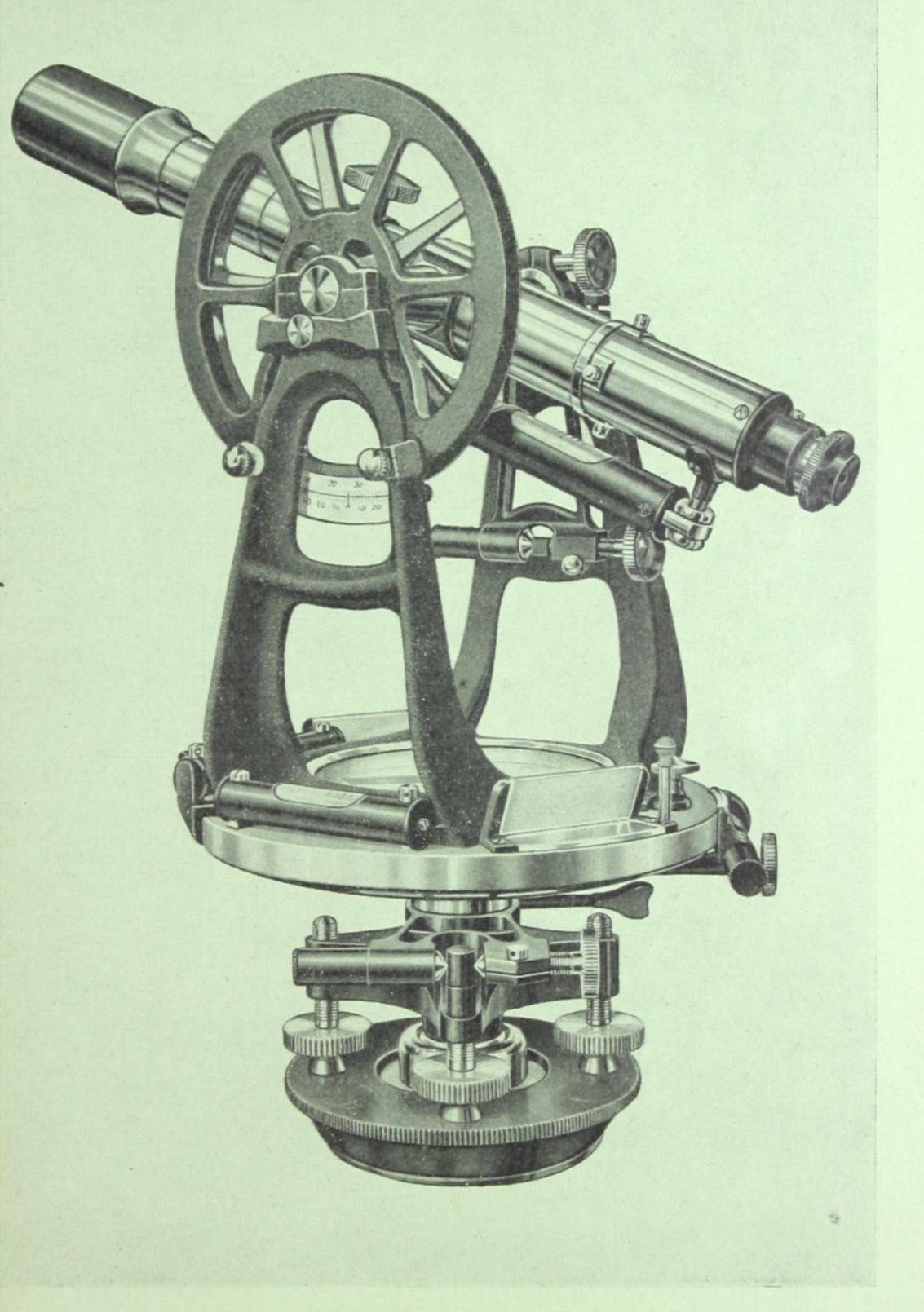
73341 (372-F) Engineers Dumpy Level, 18" telescope, internal focusing, magnifying 38x, objective aperture, 1.69", minimum focus about 9 ft. Telescope level 8½" long, sensitivity of bubble about 20 sec. per 2 mm graduation. Standard Tripod (402). Each Weight 9 lbs., of Tripod 11½ lbs......

NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

MAGE 334 Johnson

BUFF TRANSITS AND LEVELS



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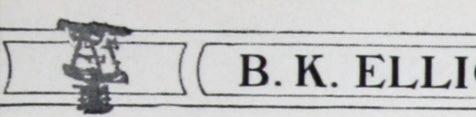
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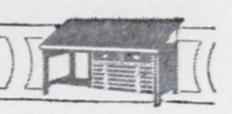
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THE BUFF PRECISE TRANSIT

The "Buff" Precise Transit has behind it an unparalleled history of years of uninterrupted success, demonstrating the correctness of the design and the accuracies of construction. We offer for your consideration the following facts:

- 1. Buff holds the record for accuracy on triangulation work for bridges, tunnels and boundary line surveys. (See U. S. Supreme Court records in case of State of Texas, defendant, and State of Oklahoma, complainant.)
- 2. Buff is 100% non-corrosive; of bronze construction throughout, with graduations on solid silver.
- 3. Buff spool type axle bearings, technically known as "Double Thrust and Radial Axle Bearings," eliminate side play and loose standards.
- 4. Buff error-proof bearings, automatic type, hold telescope in any position without clamping and prevent bearing from wearing oval, a patented feature. These bearings will produce lines on the ground with uncanny accuracy of only 3/10,000" error, on a sight of 11,000 yards.
- 5. Buff graduations accurately cut diamond rulings—every line of the same width ensuring extreme accuracy to a fraction of a second.
- 6. The telescope has 40% oversize field for penetrating haze and permitting longer working days in winter. The latest type of Night Lenses is the **Buff** "X" System.
- 7. The entire instrument is of "stream-line" design preventing vibration on windy days, and the telescope, of small diameter barrel design, cuts the wind.
- 8. The large vernier openings permit brilliant illumination for accurate, speedy readings.
- 9. The centers are larger and stronger, 100% oversize for accuracy and strength. They are tested $\frac{1}{50000}$ of an inch.
- 10. Extra large bubbles permit accurate setting, and avoid shadows. Adjustments hold permanently.

BUFF MATERIAL AND CONSTRUCTION

Every single part of a **Buff** Transit is made of the best materials obtainable, and of the most approved design known to the Scientific arts.

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A Buff owner so rarely has to take his instrument apart that he seldom sees these bearings upon whose design and proper construction a smooth-operating and powerful instrument absolutely depends.

The center bearings are of bronze metals, the finest for the purpose, as the experience of over 80 years indicates. The three widely different compositions of phosphor-bronze, gun-metal bronze, and hard red bronze are the metals chosen, since each has for the next, respectively, the least coefficient of friction, of expansion and contraction. All of these three alloys can be compared in strength and hardness only to tempered steel.

There is no better metal for instrument-making than manganese bronze; it can be machined only by using powerful and accurate lathes. Buff uses this remarkable tough metal for its horizontal limb, vernier plates, standards, and outer members.

Telescopes, axles, inner centers are of hard bell metal. Not a soft or yellow brass casting is used on a Buff.

Slow-motion tangent screws, and levelling screws, throughout **Buff** instruments, have 25% greater wearing surface on the thread of the screw.

This again is one of those details that cost more through the shop production, but which is worth the extra cost.

Mathematical analysis has consistently strengthened **Buff** accuracy and smooth operation. External finish is a factor in sales argument, but when the finish is worn the important characteristics built into each **Buff** assert themselves—**Buff** supremacy is constantly revealed.

Buff style is synonymous with real beauty and the highest accuracy.

Buff instruments are safe to buy because the Buff character is built into each instrument. In the Buff shop every detail of manufacture is personally studied each day—so that for a generation to come each finished instrument may satisfy all requirements. The leading dealer in each city is pleased to sell Buff's on account of reputation and prestige accruing to him.





BUFF CENTERS

Next to accuracy of graduations it is important that the centers be true frustums of accurately circular cones and fitted to retain that theoretical accuracy. They should be constructed of the hardest possible metals.

Manganese bronze, containing 90% copper, is extensively applied in our instruments on account of its great tensile strength.

That our centers are accurately conical frustums, we are convinced by repeated and exhaustive tests, and moreover we are satisfied that they are so in every instrument, because of the methods we employ in turning them—upon "dead center lathes"—being precision lathes without spindles, and merely having a dead head-stock, with immovable center, and tail-stock center, between which the work is rotated.

That they are fitted to retain that accuracy—we take especial pride in stating—because:

- 1. The long tapers, possible in our instruments, terminating in the broad flanges, are both theoretically and practically the best.
- 2. These long tapers are most carefully and perfectly fitted by the expenditure of much expert labor. Upon the nicety of this fit depends the accuracy and longevity of the entire instrument.

For the Wye level centers—where the presence of iron is not prohibitory—an option has been recently offered, at a slight additional expense, of a hardened steel center in a socket of superior annealed charcoal iron.

It is unnecessary to say that these metals are the best possible for any center (when their presence is not objectionable) and this combination is universally adopted for all large astronomical instruments, and provides:

- 1. The minimum co-eff. of expansion of any two metals.
- 2. The minimum difference of the co-eff. of expansion of each.
- 3. The minimum co-eff. of friction.

BUFF TELESCOPES

One of the four important parts of the Engineer's Transit is the telescope. A Transit, no matter how perfect and well-constructed, will give constant annoyance if the telescope is of faulty design.

The telescope must shoot straight and be true for any distance. This requires the inner slide to be more true to line than the finest rifle, eliminating the tiniest errors by repeated tests. Accuracy to 1/50,000 of an inch is demanded.

The inner slide of a Buff telescope is a dense red bronze, and the outer slide, a hard-drawn brass alloy, a combination providing greatest anti-friction qualities for many years.

A Buff telescope gives a more satisfactory optical combination with 10% greater illumination. It has slightly greater power and a sharper defined field.

The most modern astronomical practice is Buff's guide. The Buff X System of lenses was designed to increase illumination—it is the best system of night lenses ever devised. Buff X Telescopes have such exceptional brilliancy that once the engineer has used them, he prefers them above all others.

"The line of collimation shall not change." Buff Transits are equipped with newstyle friction bearings on the axle of the telescope. These bearings provide absolute adjustment for the line of collimation. They require no adjustment and are not affected by temperature changes.





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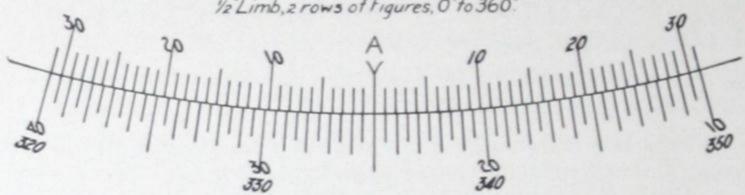
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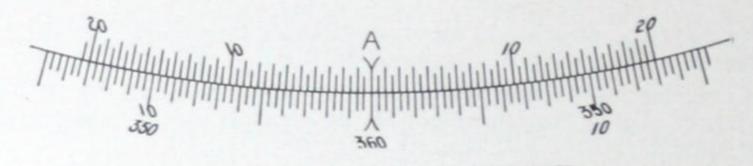
PATE

GRADUATIONS

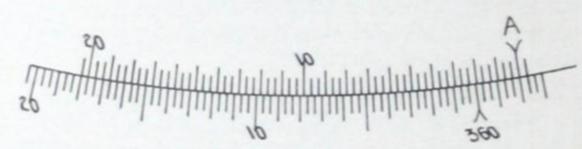
Vernier to Single Minutes - Double Reading. 1/2 Limb, 2 rows of Figures, 0 to 360.



Vernier to 30 Seconds - Double Reading - 1/3 *Limb, 2 rows of Figures 0 * to 360 *



Vernier to 20 Seconds - Single Reading.
Vs*Limb, I row of Figures 0 to 360.



This 20" vernier is 105% easier to read than 1/4° Limb. to 20 seconds

The uniformity of the graduation line—as placed upon our circles and verniers—we deem the special features of our graduations next to spacing. We claim—

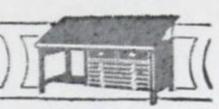
- 1. The delicately poised mechanism, supporting the finely ground cutter, is of extraordinarily rigid construction.
- 2. The long experience dictating the proper combination of cutting angles ensures that the cutter is ground to the seven correct angles, which will cut the last line equally as wide as the first.

The final fitting together of the graduation and verniers is performed by ourselves, and is guaranteed for life.

All graduations are sterling silver with a dull, frosted finish of harmonious whiteness, facilitating rapid reading in the field. Solid silver graduations are ground and polished dead flat automatically. This is a feature found only in our transits.

The figuring on our graduation is particularly plain and legible, especially on mining instruments, and is always inclined in the direction it should be read.





BUFF TELESCOPE BEARINGS

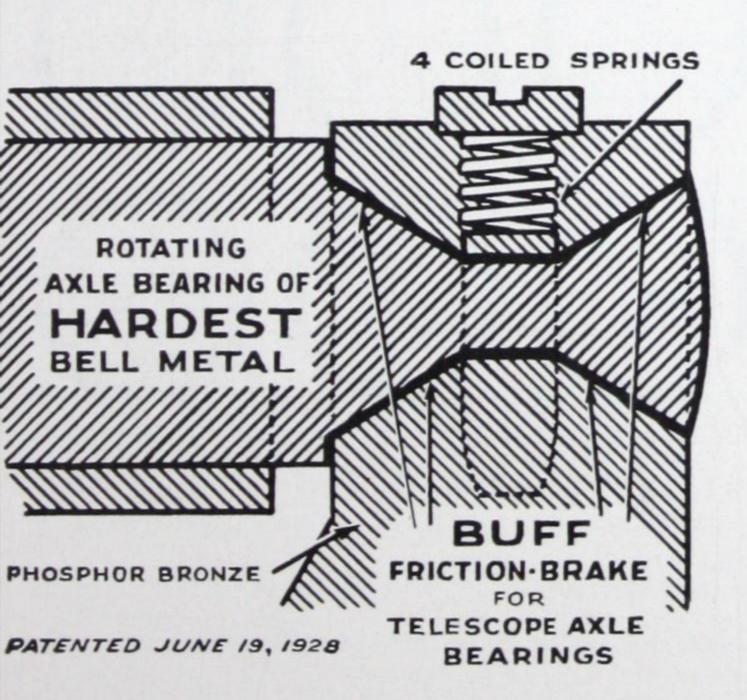
Unexpected errors cause untold expense.

This fact is proved over and over again every day in the year. To void errors is a problem of every Civil Engineer.

In 1928, Buff invented the error-proof telescope bearing, especially esigned to prevent telescope errors. It is exclusive with Buff. There are spring tongues to prevent wabbling—and no extra lenses as in internal ocusing, which cut the light 11%. Every Buff telescope is absolutely in erfect balance and dust-tight. In addition, Buff supplies a soft friction, o when the telescope is sighted, it remains in that position. This is a reat convenience and prevents many errors, but the important error-proof condition is the uniform friction on the bearings all around—at very point. It preserves this bearing beautifully round. It does not wear wal, and it does prevent errors. Highest type of precise triangulation is accomplished.

There is no substitute for this perfect axle bearing. It is the one big improvement which has been applied to Transits during the past twenty-ive years. Remember:

- 1. Buff holds the record for accuracy on triangulation work for bridges, tunnels and boundary line surveys. (See U. S. Supreme Court records.)
- 2. Buff spool type axle bearings, technically known as "Double Thrust and Radial Axle Bearings," eliminate side play and loose standards.
- 3. Buff error-proof bearings, automotive type will produce lines on the ground with uncanny accuracy of only 3/10,000" error on a sight of 11,000 yards. "Your organization is



deserving of great praise and should be justly proud of its contribution to present day Engineering Science, for beyond a shadow of doubt, the **Buff** Transit has done most to advance our profession to its present point." E. S. B. 1932,

4. Buff provides double lock nut adjustment for the vertical sighting, ensuring repeated accuracy which is so necessary on modern steel buildings, and shafts and mining work.





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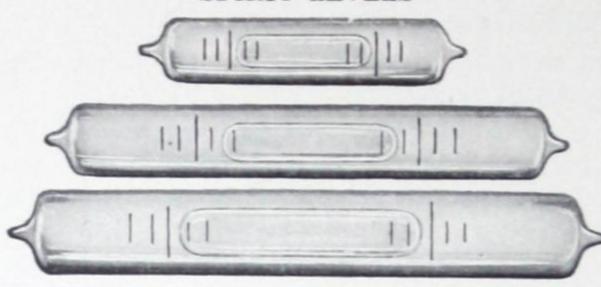
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SPIRIT LEVELS



LENGTH DIAMETER SENSITIVENESS

11	6 in.	4/10 in.	60" to 80"
2	in.	5/10 in.	30" to 60"
21	2 in.	5/10 in.	20" to 30"
3	in.	6/10 in.	15" to 20"
4	in.	6/10 in.	15" to 20"
5	in.	7/10 in.	15" to 20"
6	in.	8/10 in.	10" to 15"

(See Price List for Prices on above) Special sizes and lengths made to order at reasonable cost.

STADIA DIAPHRAGMS

8.71 square inch plus 6.72 inch equals 15.43

The above two large areas in square inches are the size of the Bearing Surfaces of "Buff" Transit centers.

Such a large size is most unusual.

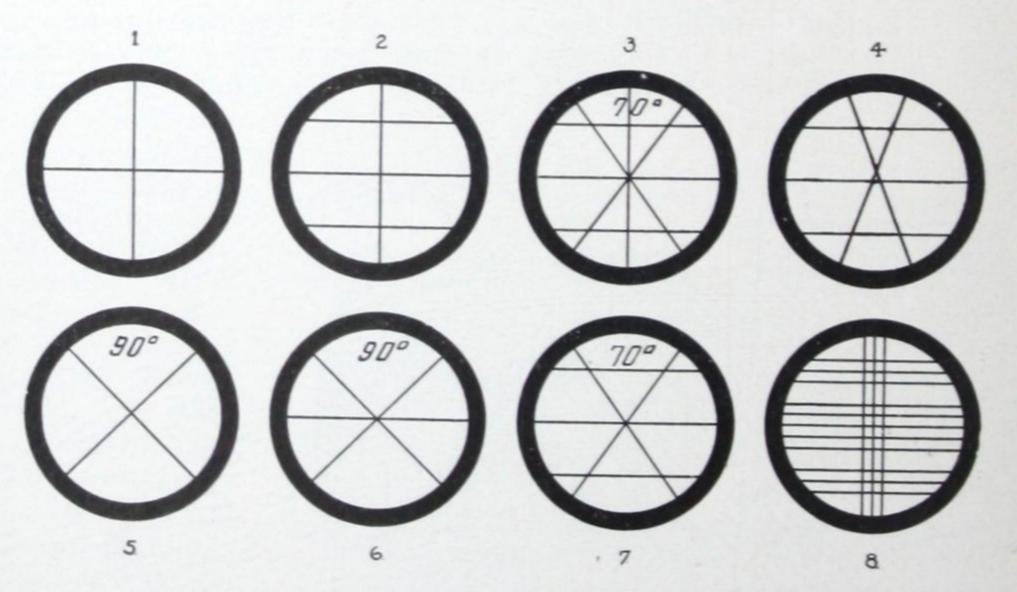
It is one of several reasons why "Buff" leads in Durability and Long Life.

Consider for a moment: A total of over 15 square inches for Buff's two center bearings! And this entire surface is fitted to an accuracy of 1/50000 part of an inch. And of the hardest phosphor bronze and gunmetal.

This accuracy enables most satisfactory stadia work.

Diagrams below show best arrangements for all cases of engineering and surveying practice.

Our custom is to set the Stadia wire at 1 to 100 to read correct from center of Transit without addition of constant F+C.



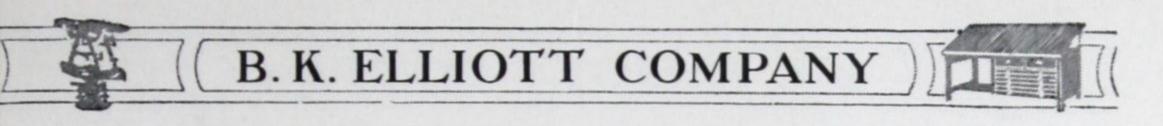
Nos. 1, 5 or 6 are furnished as equipment

EACH

- 2. Stadia and cross-wires.....
- 3. Stadia and diagonal wires 70°..... 4. Stadia and diagonal 1/8" above intersection.....
- 7. Triangulation..... 8. Stellar observation.....

See Price List Inside Back Cover

PAGE 340 Promon



AN EXPLANATION OF BUFF NUMBERS AND LETTERS

For many years our catalog has standardized on the following numbers and letters Four numbers signifying sizes: No. 1, No. 2, No. 3, No. 4 (per table below).

No. 1 being the regular "City Size" transit. No. 4 the extra small "Baby Size" for mining.

Specifications of Four Regular Sizes of the "Buff" Transit

	Size No. 1	Size No. 2	Size No. 3	Size No. 4
Weight	15 lbs.	13 lbs.	8 lbs.	5 lbs.
Dia. of Grad	61/4 in.	$5\frac{1}{2}$ in.	$4\frac{1}{2}$ in.	4 in.
Length of Needle	$4\frac{1}{2}$ in.		$3\frac{1}{4}$ in.	$2\frac{1}{2}$ in.
Power Erect. Telescope	26.5 dia.	22.5 dia.	18 dia.	17 dia.
Power Invert. Telescope	29 dia.	25 dia.	22 dia.	20 dia.
Length of Telescope	12 in.	$10\frac{3}{4}$ in.	9 in.	8 in.
Length Level Bubble	6 in.	$5\frac{1}{2}$ in.	4 in.	4 in.
Dia. Telescope Aperture	$1\frac{1}{4}$ in.	$1\frac{1}{4}$ in.	$1\frac{1}{8}$ in.	$1\frac{1}{8}$ in

The following letters each signify a definite equipment:

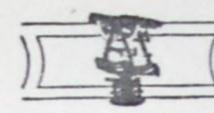
- (1 A) Transit. Complete with full equipment, mahogany case, tripod, adjusted and tested for immediate service in the field, complete as shown page 344, including fixed stadia wires and general specifications, page 343.
- (1 B) Same as (1 A) but including vertical arc of 180 degrees and fixed stadia wires as shown page 344.
- (1 C) Same as (1 A) but including full vertical circle of 360 degrees and fixed stadia wires, as shown page 345.
- (1 D) Same as (1 A) but equipped with "U" standards, no compass, no vertical arc, as shown page 346.
- (1 E) With new "U" standards, 3¾" compass needle, fixed stadia wires, as shown page 346.
- (1 EC) Same as (1 E) with full vertical circle.
- (1 F) Same as (1 C) and equipped with axle threaded for top and side telescope.
- (1 G) Same as (1 C) but vertical circle graduated on the edge.
- (1 H) Same as (1 C) but equipped with axle arranged to take detachable top and side telescope and vertical circle with edge graduation.

In general, any of the four sizes, Nos. 1, 2, 3, 4, and any letter type can be made up. We reserve the privilege of advising the engineer as regards the suitability of the particular instrument which he may select.

Example—When ordering or making inquiry, specify by number and letter.

NOTE—Numbers shown in (—) are manufacturers' numbers

Only an instrument which serves well is economical





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Item h.

Item i

Item j.

Item k.

Item L

Item m.

Item n.

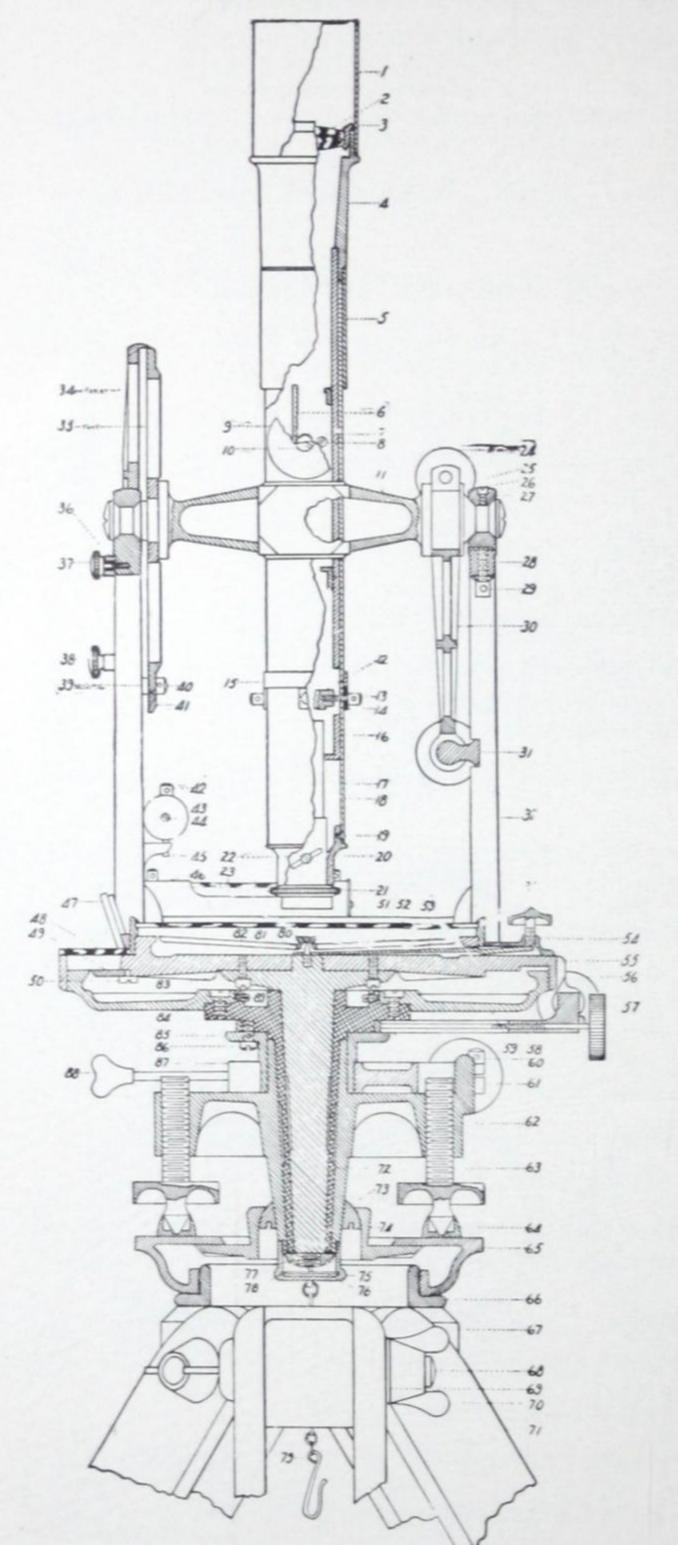
Item o.

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CROSS SECTION OF BUFF TRANSIT



1—SUNSHADE -OBJECT GLASS -OBJECT CELL -OBJECT HEAD 5—PROTECTION CUFF 7—PINION 8-PINION SADDLE SCREWS 9-PINION HEAD 10-PINION HEAD SCREW 11-TELESCOPE AXLE 12—CROSS HAIR DIAPHRAGM 13-DIAPHRAGM SCREWS 14—DIAPHRAGM WASHER 15—REINFORCING RING 16—EYE-PIECE RING 17—EYE-PIECE LENS TUBE 18-TELESCOPE BODY TUBE 19-EYE-PIECE HEAD SCREW 20—EYE-PIECE CAP 22—EYE-PIECE SCREW 23—EYE-PIECE SLEEVE 24—TELESCOPE CLAMP SCREW 25-TELESCOPE CLAMP WASHER 26-STANDARD COVER SCREW 27—STANDARD COVER 28-AXLE ADJUSTING BLOCK 29-AXLE BLOCK ADJUSTING SCREW OR NUT 30—TELESCOPE TANGENT 31-TELESCOPE TANGENT SCREW 32—STANDARDS 33—NEEDLE LIFTER SCREW 34—VERTICAL GUARD 35-VERTICAL CIRCLE 36-VERNIER GUARD SCREW WASHER -VERTICAL GUARD SCREW 38-VERTICAL GUARD SCREW 39-VERTICAL VERNIER WASHER 40-VERTICAL VERNIER SCREW 41-VERTICAL VERNIER 42-STANDARD BUBBLE CAPSTAN SCREW 43-STANDARD BUBBLE 44-STANDARD BUBBLE TUBE 45-STANDARD BUBBLE SPLINE SCREW 46—PLATE BUBBLE 47-VERNIER SHADE GLASS AND HOLDER 48-VERNIER COVER GLASS 49-VERNIER GLASS KEEPER 50-HORIZONTAL VERNIER SCREW 51-COMPASS GLASS 52—COMPASS NEEDLE 53-NEEDLE LIFTER 54-LIFTER KNOB 55—PLATE TANGENT PIECE 56-PLATE TANGENT SCREW 57-PLATE CLAMP SCREW 58-PLATE CLAMP 59-HORIZONTAL CIRCLE 60-LOWER CLAMP TENSION SCREW 61-LOWER CLAMP TANGENT SCREW 62-SOCKET OR OUTER CENTER 63—LEVELLING SCREW 64-LEVFLLING SCREW CUP 65-FOOT PLATE 66-PACKING RING 67-TRIPOD HEAD 68—TRIPOD BOLT 69-TRIPOD BOLT WASHER 70-TRIPOD BOLT NUT 71-TRIPOD LEG 72-INTERMEDIATE CENTER 73—BALL NUT 74—SHIFTING PIECE

75—CENTER CUP

77—CENTER NUT

85-CLAMP COLLAR

87-LOWER CLAMP

76—CENTER CUP SPRING

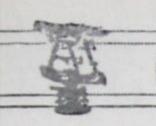
86-CLAMP COLLAR SCREW

88-LOWER CLAMP SCREW

78—TIE RING FOR PLUMB BOB CHAIN 79—PLUMB BOB HOOK AND CHAIN

When ordering repair parts, use numbers on this page. Also, be sure to give serial numbers engraved in compass box.

See Price List Inside Back Cover



73431

B. K. ELLIOTT COMPANY



SPECIFICATIONS: No. 1 BUFF TRANSIT

Telescope: 12" long—has erecting image, stable and firm in all positions, whether extended or not, without being clamped. To reverse at either end 11/8". Inner slide 7 inches long of phosphor-bronze fitted all around and lapped full length to a snug sliding fit in outer tubing 11/8" narrow bore (low wind resistance) of seamless brass, having anti-friction characteristics. 11/4 inch objective, with power of 26.5 diameters. Lenses of purest Jena glass free from chromatic or spherical aberration, equally clear cut and brilliant over whole field. To focus at five feet. Center point on top center of telescope axle. Adjustment for vertical plane to be immovably anchored by strong stud bolt with two locknuts. Line of collimation correct for all distances. Standards of black Morocco finish with clamps and tangents. Bearings double "V" type spool-form, spring closure—dust-proof caps, with no lateral play. Shifting center with three-quarter inch adjustment. Spirit level, machine ground, 6 inches long, sensitive to 20 seconds. Vertical arc 5 inches on solid silver to minutes 0-90° each way.

Graduations: 61/4 inches in diameter with two opposite double reading verniers to minutes placed 30° to line of sight. Two rows of opposite inclined figures 0 to 360°. Divisions guaranteed accurate within 1½ seconds of arc. Graduations on solid silver and protected by crystal plate glass covers. Ground glass shades for verniers to give maximum illumination.

Compass: Compass needle 4½ inches long, of special Swedish magnet steel, resting on glass hard pivot, of special Buff form, and corrected for dip. Compass circle graduated to half degrees; figured from 0 to 90° each side of North and South and from 0 to 360° with variation ring. Graduation and variation plate and ring heavily silvered.

General: Improved upper and lower compression spring tangent clamps. Plate spirit levels machine ground, sensitive to 80 seconds. Long taper centers with broad flanges and of hardest bell metal and phosphor-bronze, substantially the equivalent of the hardest steel; no soft or yellow brass permitted. Bearings and graduation set true to 1/50000 of an inch.

Improved type tripod, 12 thread, of one-piece white ash. Split legs with wing nuts and one-piece bell metal head. Three coats of hard shellac (and varnish), each

rubbed and oil dressed. Average weight 8½ lbs.

Plumb bob of hard metal with extremely low center of gravity and point of hardened tool steel. Solid mahogany instrument box provided with strap, brass lock and hooks; designed to permit the instrument to be fastened on a substantial sliding base of one-inch cherry. Contains plumb bob, wrenches, pocket reading glass, screw driver, sun-shade, adjusting pin, etc. Total weight of instrument 15 lbs.

EXTRAS AND ATTACHMENTS, COMMON TO ALL SIZES

Jointed Reading Glass for read- ing Verniers	PRICE	Item p.	Reversion Level, for leveling with Telescope reversed	PRICE
Beaman Stadia Arc for No. 1 B		Item q.	Fixed Stadia Wires, guaranteed	
Graduation, Horizontal Circle,		Item r.	Variation Plate and Ring	
reading to 30 sec		Item s.	Short Focus Lens Attachment.	
Graduation, Horizontal Circle,			No. 1 Lens	
reading to 20 sec		Item t.	Dust-Cap to Leveling Screws	
Graduation, Horizontal Circle,		Item u.	Silk Waterproof Bag to cover Instrument	
		Item v.		
		Item w.		
		Item x.		
Improved Gradienter Attach- ment		Item y.	Reflector Shade for Cross-wires	
	ing Verniers Beaman Stadia Arc for No. 1 B Transit Graduation, Horizontal Circle, reading to 30 sec Graduation, Horizontal Circle, reading to 20 sec Graduation, Horizontal Circle, reading to 10 sec Graduation, Vertical Circle, solid silver Reading Glasses to Horizontal Vernier Improved Gradienter Attach-	ing Verniers Beaman Stadia Arc for No. 1 B Transit Graduation, Horizontal Circle, reading to 30 sec Graduation, Horizontal Circle, reading to 20 sec Graduation, Horizontal Circle, reading to 10 sec Graduation, Vertical Circle, solid silver Reading Glasses to Horizontal Vernier Improved Gradienter Attach-	ing Verniers Beaman Stadia Arc for No. 1 B Transit	ing Verniers

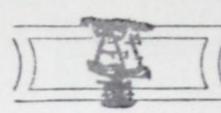
CHARACTERISTICS

The transit, as illustrated, represents the highest perfection of the instrument maker's art. Accuracy, quality, finish and equitable price have obtained for it exclusive use on the largest works in progress at the present time.

The sensitiveness of the spirit level attachment is equivalent to that of many wye levels, and allows of high accuracy in leveling up to 200 feet sights.

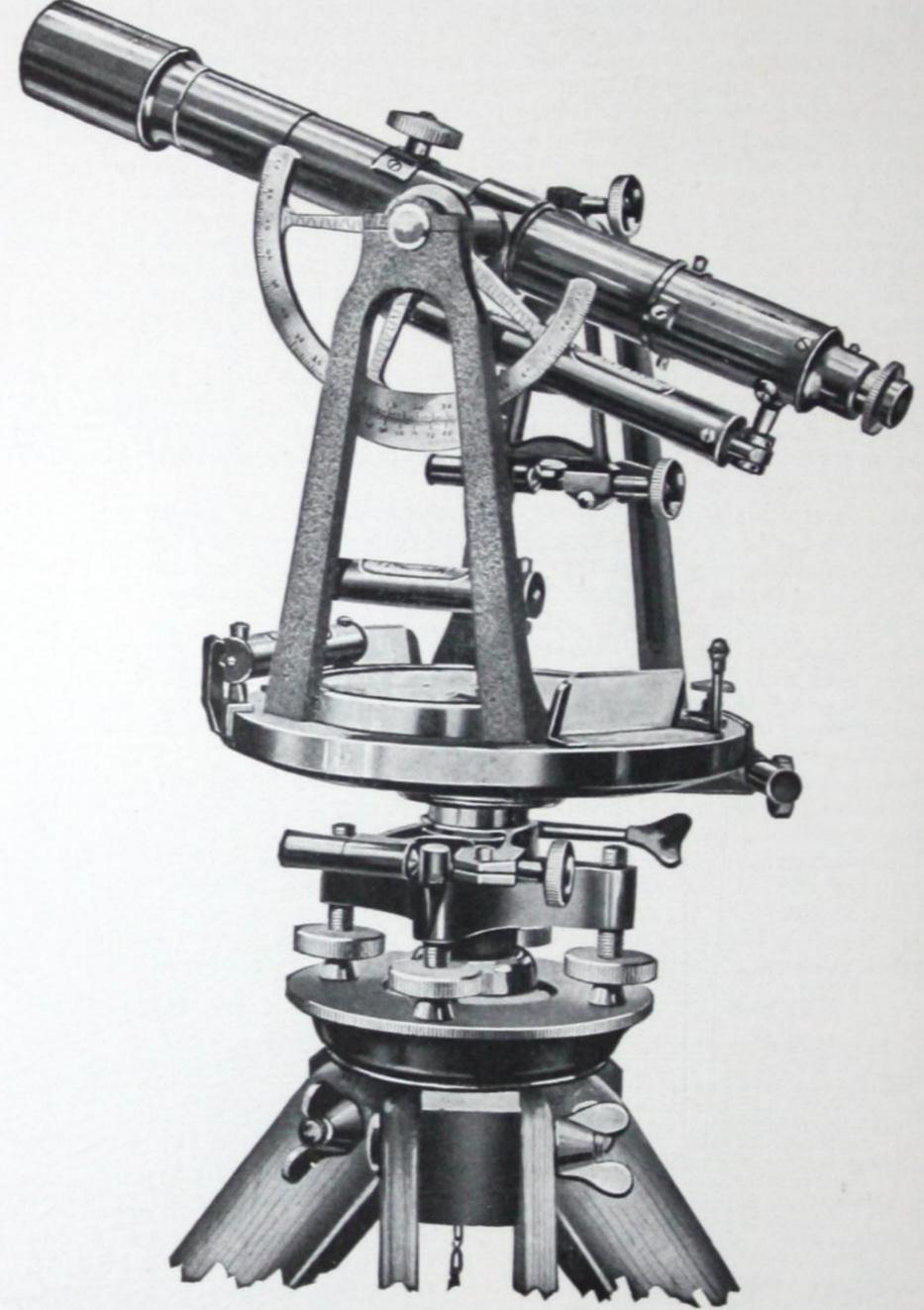
See Price List Inside Back Cover

PAGE 343 Porco





BUFF "PRECISE" TRANSIT



73441

61/4-IN. BUFF PRECISE TRANSIT, (1 B)

Specifications, page 343

All No. 1 size Buff instruments can be furnished with the X telescope.

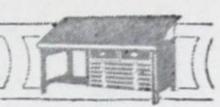
The X telescope gives extraordinary clarity, shorter focus, and is especially adapted for mine and tunnel work.

73442 (1A) Buff Precise Transit, same as No. 73441 but without Vertical Arc. NOTE—Numbers shown in (—) are manufacturer's numbers

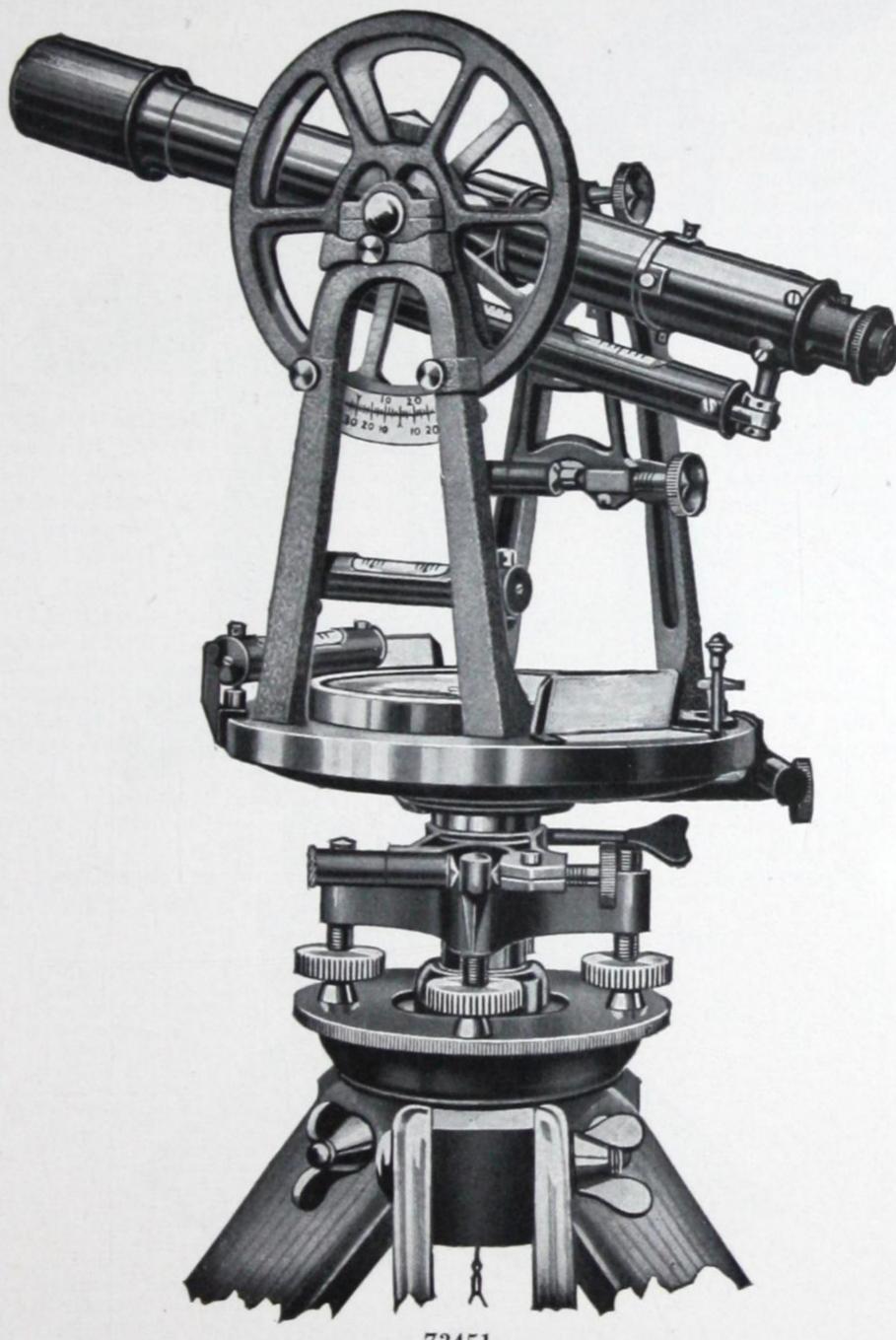
See Price List Inside Back Cover

Some Page 344 Johnson





BUFF "PRECISE" TRANSIT



73451

61/4-IN. BUFF PRECISE TRANSIT, (1 C) (Design Patented)

Specifications, page 343

Also furnished with the X telescope. See page 337 for description of X telescope.

NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

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73461

61/4-IN. UNIVERSITY PRECISE, (1 EB)

This style is one of the finest designs, combining the U standards, maximum size of compass and low center of gravity. Weight 15 lbs.

Specifications, page 343

Also furnished with the X telescope. See page 337 for description of X telescope.

73462 (1EC) Same as 73461—with full Vertical Circle and Guards

73463 (1D) Same as No. 73461 but without Vertical Arc or Compass.

NOTE—Numbers shown in (—) are manufacturer's numbers

See Price List Inside Back Cover

PAGE 346 Junior

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73471
Item h.
Item j.
Item k.
Item k.
Item m.
Item n.
Item o.
Item p.
Item q.
Item q.
Item s.
Item u.
Item u.
Item u.
Item u.
Item v.

Item x.
Item y.
Item as.
Item bb.
Item dd.

Item ee. Item gg. Item hh. Item ii. Item jj.

Item kk Item II.



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tem k.

tem I.

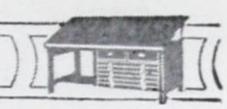
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tem n.

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tem q.

B. K. ELLIOTT COMPANY



PRICE

SPECIFICATIONS: No. 2-B BUFF TRANSIT

Telescope: Has erecting image and with friction bearings to hold firm in any position whether extended or not, without being clamped in place. To reverse at either end—10¾ inches long. Inner slide 5½ inches long of phosphor bronze fitted all around and lapped full length to a snug sliding fit in outer tubing of hard rolled brass, having anti-friction characteristics. 1¼ inch objective, with power of 22.5 diameters. Lenses of purest Jena glass, free from chromatic or spherical aberration, equally clear cut and brilliant over whole field. To focus at five feet; center point on top of center of telescope axle. Adjustment for vertical plane to be immovably anchored by strong stud bolt with two lock nuts. Line of collimation correct for all distances. Bearings double conical spool form spring closure, dust-proof caps, with no lateral play. Shifting center with ¾ inch adjustment. Standards black finished with clamps and tangents. Spirit level, medium ground, 5½ inches long, sensitive to 24 seconds.

Graduations: 5½ inches in diameter with two opposite double reading verniers to minutes placed 30° to line of sight. Two rows of opposite inclined figures 0 to 360°. Divisions guaranteed accurate within 1½ seconds of arc. Graduations on solid silver and protected by crystal plate glass covers. Ground glass shade for verniers to give maximum illumination fixed at angle of 60°. Vertical arc 5 inch diameter.

Compass: Compass needle 3¾ inches long of special Swedish magnet steel, resting on hardened steel pivot, of special Buff form, and corrected for dip. Compass circle graduated to half degrees; figured from 0 to 90° each side of North and South and from 0 to 360°. Graduation and vernier face heavily silvered, and water-tight.

General: Improved upper and lower compression spring tangent clamps. Plate spirit levels machine ground; sensitive to 30 seconds. Long taper centers with broad flanges and of hardest bell metal and phosphor bronze, substantially the equivalent of the hardest and toughest steel; no soft or yellow brass used. Bearings and clearances true to 1/50000th of an inch. Weight of transit—13 lbs. Tripod, 8 lbs.

Improved type tripod of one-piece white ash. Split legs with wing nuts and one-piece bell metal head. Three coats of hard shellac, each rubbed and oil dressed, and fine coat of Spar varnish.

Plumb bob of hard bronze metal with extremely low center of gravity and point of hardened steel. Mahogany instrument box provided with strap, brass lock and hooks; designed to permit the instrument to be attached to a sliding base-board of 1" cherry; contains plumb-bob, pocket reading glass, wrenches, screw driver, sunshade and adjusting pins.

3471 EXTRAS TO No. 2 SIZE OF TRANSIT

Jointed Reading Glass for reading Verniers.

Graduation, Horizontal Circle, reading to 30 seconds.

Graduation, Horizontal Circle, reading to 20 seconds.

Graduation, Horizontal Circle, reading to 10 seconds.

Graduation, Vertical Circle, on solid silver.

Reading Glasses to Horizontal Verniers (adjustable).

Gradienter Attachment.

Reversion Level, for leveling with Telescope reversed.

Stadia Wires, fixed.

Variation Plate and Ring.

tem x. Extra Regular-Leg Tripod...
tem y. Reflector Shade for Cross-wires.
tem z. Saegmuler Solar Attachment...
tem aa. Prism, attached to Eye-piece...
tem bb. Prism combination pivoted, with Colored Glasses.

tem cc. Edge graduation for Vertical Circle, 5 in. diameter....
tem dd. Trivet, for setting Instrument on Beams, etc., in Longitudinal passages, 2-inch, 3-inch and
6-inch Legs...
tem ee. Detachable side Telescope with Counterpoise...

tem ee. Detachable side Telescope with Counterpoise...

tem gg. Leather Cover, at cost to us...

tem hh. Leather Cover, with Straps...

tem ii. Plummet-lamp, improved form...

tem jj. Bracket—for use in mines—instead of Tripod—heavy casting complete and ready for Instrument...

See Price List Inside Back Cover

Some Page 347 Johnson





BUFF "PRECISE" TRANSIT



73481

73481 5½-IN. BUFF PRECISE TRANSIT, (2 B)

Light Mountain Size. Weight 12 lbs.

Decreased in size and weight, but identical in design to the regular No. 1 B.

73482 (2 C)—With Full Vertical Circle and Guard

Specifications, page 347

All No. 2 Buff Transits can be furnished, at a small additional cost, with a telescope focusing to 3½ feet from center of axis.

NOTE—Numbers shown in (—) are manufacturer's numbers

See Price List Inside Back Cover

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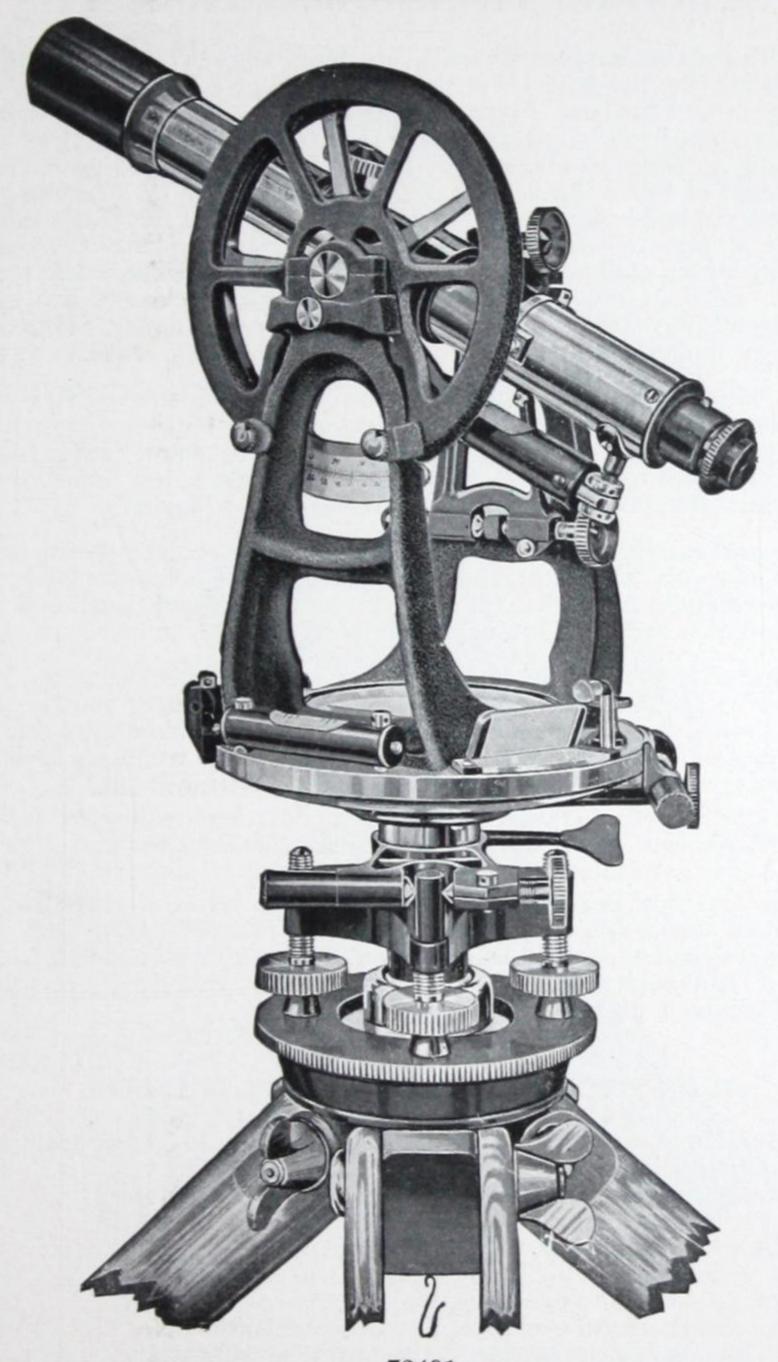
7349

7349





BUFF "UNIVERSITY" TRANSIT



73491

5½-INCH LIGHT MOUNTAIN UNIVERSITY, (2 EC)

73491 (2 EC) This style combines the "U" standards and a maximum size of compass needle, 3½ inches long. With full vertical circle and guard. Extra light weight.....

73492 (2 EB)

Same as 73491 with vertical arc.....

NOTE—Numbers shown in (—) are manufacturer's numbers

Specifications see page 347

See Price List Inside Back Cover

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SPECIFICATIONS: No. 3 TRANSIT

- Telescope: With erecting image and vertical arc, four inches in diameter, stable and firm in any position whether extended or not, without being clamped in place. To reverse at either end—9 inches long. Inner slide 5½ inches long of phosphor bronze fitted all around and lapped full length to a snug sliding fit in outer tubing of hard-rolled brass, having anti-friction characteristics. 1½" objective, with power of 18 diameters. Lenses of purest Jena glass, free from chromatic or spherical aberration, equally clear cut and brilliant over whole field. To focus at five feet; center point on top center of telescope axle. Adjustment for vertical plane to be immovably anchored by strong stud bolt with two lock nuts. Line of collimation correct for all distances. Bearings double conical spool form spring closure, dust-proof caps, with no lateral play. Shifting center with 5%-inch adjustment. Standards leather finished with clamps and tangents. Spirit level 4 inches long, sensitive to 20 seconds
- Graduations: 4½ inches in diameter with two opposite double reading verniers to minutes placed 30° to line of sight. Two rows of opposite inclined figures 0° to 360°. Divisions guaranteed to be accurate within 1½ seconds of arc. Graduations of solid silver and protected by crystal plate glass covers. Ground glass shade for verniers to give maximum illumination and fixed permanent at 60° angle.
- Compass: Compass needle 3¼ inches long of Swedish magnet steel, resting on hardened steel pivot, of special Buff form, and corrected for dip. Compass circle graduated to half degrees; figured from 0° to 90°, each side of North and South and from 0° to 360°. Graduation and vernier face heavily silvered.
- General: Improved upper and lower compression spring tangent clamps. Plate spirit levels machine ground; sensitive to 90 seconds. Long taper centers with broad flanges and of hardest bell metal and phosphor bronze, substantially the equivalent of the hardest and toughest steel; no soft or yellow brass whatever used. Bearings and clearances true to 1/50000 of an inch. Weight of transit—8 lbs.

Improved type tripod of one-piece white ash. Split legs with wing nuts and one-piece bell metal head. Three coats of hard shellac, each rubbed and oil dressed, and top coat of spar varnish.

Plumb bob of hardest bell metal with extremely low center of gravity and point of hardened tool steel. Mahogany instrument box provided with strap, brass lock and hooks; designed to permit the instrument to be attached to sliding base-board of 1" cherry. Contains plumb bob, pocket reading glass, wrenches, screw driver, sunshade and adjusting pins.

73501 EXTRAS TO No. 3 AND No. 4 SIZE TRANSITS PRICE Graduation, horizontal circle, solid silver, reading to 30 seconds..... Item Edge graduation to vertical circle, one double reading vernier Item Item Dust-proof cover of crystal plate glass completing enclosure Item Gradienter attachment, improved, guaranteed accurate Stadia wires, fixed, 1 ft. to 100 ft..... Item Two reading glasses to Hor. circle..... Item Prism, attachable to eye-piece, No. 1..... Item Prism, attachable to eye-piece, pivoted combination, No. 2..... Item 10 Item 11 Leather cover over case, sole leather, with carrying straps..... Canvas cover with leather ends for extension tripod..... Item 12 Detachable top and side-telescope with counterpoise..... Item 13 Item 14 Silk bag to cover transit..... Striding-level to complete transit..... Item 15 Reflector shade for illumination cross-wires..... Item 16 Short Focus lens attachment, No. 1, No. 2, complete set..... Item 17 Item 18 Item 19

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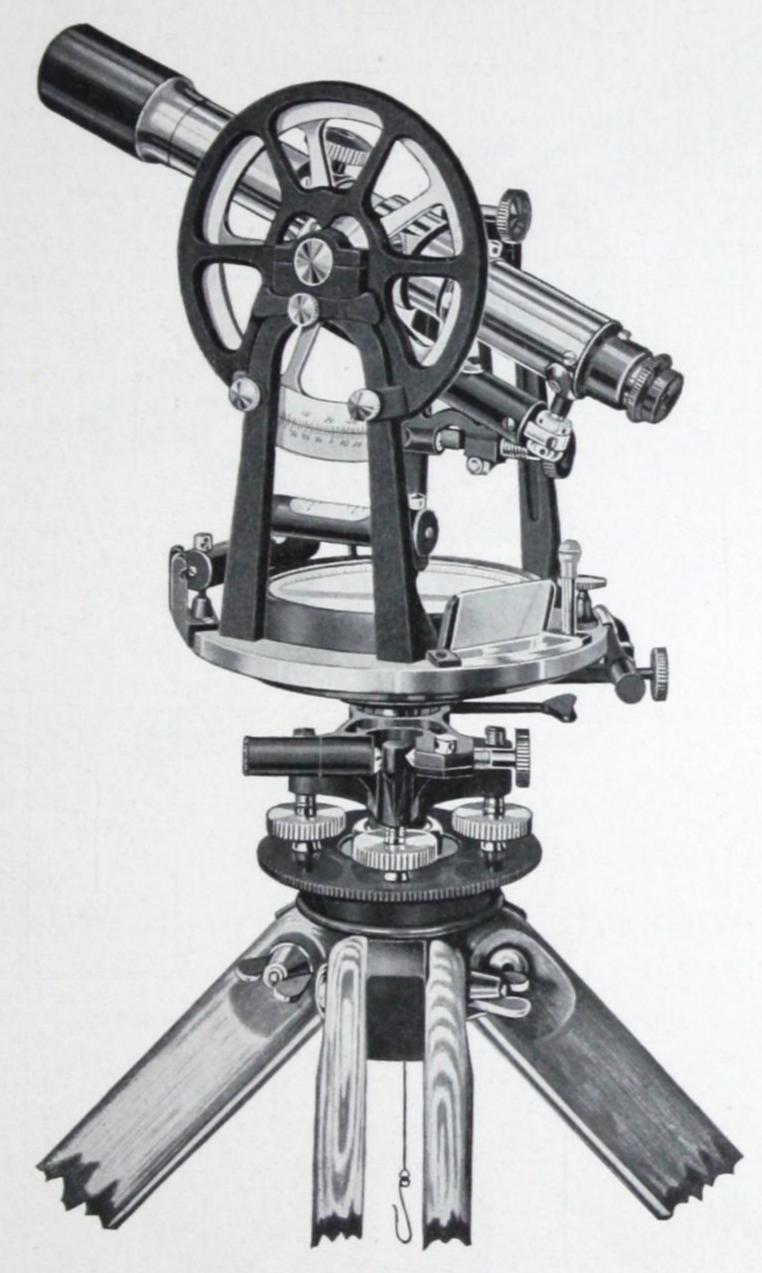
See Price List Inside Back Cover

Some Page 350 Johnson





BUFF "PRECISE" TRANSIT



73511

4½-INCH ROCKY MOUNTAIN FAVORITE (3 C) Weight, 8 lbs. Specifications, see page 350

Superior graduations guaranteed. Unexcelled telescopes. Four and a half inch diameter at edge of graduation. Ample size leveling screws to ensure ease in operating in cold weather. Extra rigid tripod to secure stability in a stiff breeze.

"Buff" graduations are accurate to 1/50000 part of an inch.

NOTE—Numbers shown in (—) are manufacturers' numbers

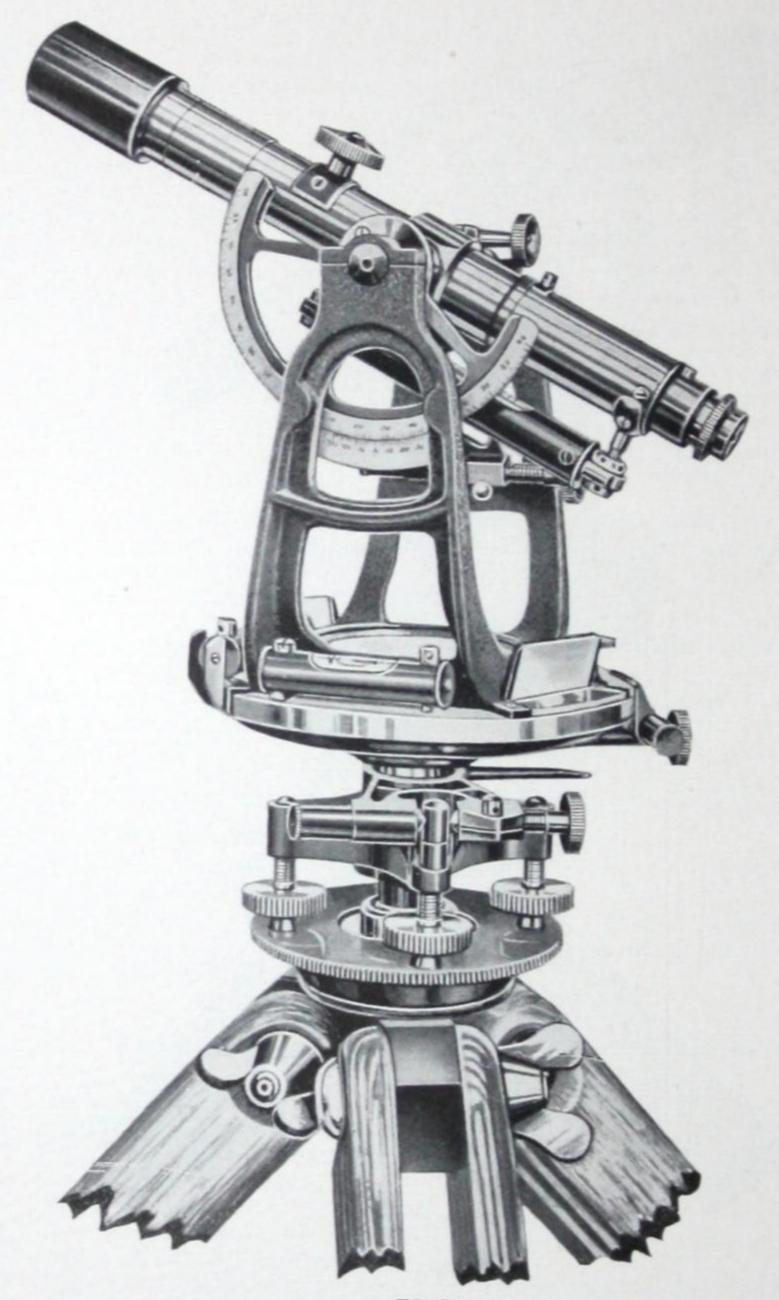
See Price List Inside Back Cover

Some Page 351 Johnson





BUFF "UNIVERSITY" TRANSIT



73521

4½-INCH UNIVERSITY MODEL (3 EB) Weight, 8 lbs. Specifications, see page 350

Designed for conservation engineers and fine mining and mountain surveying where extreme conditions require extra strength and rigidity to withstand a strong breeze. Recommended for use with solar attachment.

NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

PAGE 352 Junione

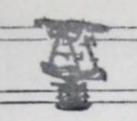
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Item Item Item Item Item Item

Item

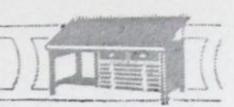
Item Item Item

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Item 16. Striding Level.

B. K. ELLIOTT COMPANY



SPECIFICATIONS FOR TRIANGULATION THEODOLITES

NUMBERS 80-81-82-83

relescope: 13¼ inches long. 13/8-inch objective with a power of 29 diameters. Improved eye-piece, reversible in standards and in bearings, inverting image, stable and firm in any position. Inner slide of phosphor bronze fitted all around and lapped full length to a snug sliding fit in outer tubing of hard-rolled brass, having anti-friction characteristics. Lenses of purest Jena glass free from chromatic or spherical aberration—clear cut and sharply defined image over entire field. Line of collimation correct for all distances. Shifting center with one inch adjustment. To focus at six feet-center point on top of center of telescope axle. Adjustment for vertical plane to be immovably anchored by strong bolt with two lock nuts. Four levelling screws of Manganese bronze. Spirit level machine ground, sensitive to 30 seconds. Finish bright throughout.

Graduation: 6½ to 10 inches in diameter with two double opposite verniers reading to 30 seconds placed 30° to line of sight. Graduations on solid silver and covered by crystal plate glass covers. Two rows of figures 0-360° clockwise. Accuracy to 1/56000th of an inch.

General: Improved upper and lower spring tangent clamps. Plate spirit levels machine ground; sensitive to seconds. Long taper centers with broad flanges and of hardest bell metal and phosphor bronze, substantially the equivalent of the hardest and toughest steel; no soft or yellow brass used. Bearings and clearances true to 1/50000th of an inch. Weight of theodolite—19 lbs.

Tripod: Improved type heavy tripod of one-piece white ash. Split legs with wing nuts and one-piece bell metal head. Three coats of hard shellac, each rubbed and oildressed. Weight of tripod—12 lbs.

Accessories: Plumb-bob of hardest bell metal with extremely low center of gravity and point of hardened steel. Mahogany instrument box provided with strap, brass lock and hooks; designed to permit the instrument to be boxed properly. Contains plumb-bob, pocket reading glass, wrenches, screw driver, sunshade and adjusting pins.

The BASE PRICE includes an instrument per "SPECIFICATIONS" above

EXTRAS (Common to all sizes)

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0-	360)				
Iot	ion	S	cre	ew		
,	, 0	0-360	, 0–360	, 0–360 ba	, 0–360 back 0–360.	g is specified , 0-360 back 0-360 Iotion Screw

Note—A special Theodolite order is nearly similar to a new Bridge job. Plans and specifications need to be laid out—special telescope made up to drawings—the horizontal graduation set up and calibrated individually and a lot of expert work, almost like an original lay-out, is needed. Naturally, this takes time and this, therefore, is a word to explain that ten days or twenty days extra time is sometimes almost unavoidable.

See Price List Inside Back Cover

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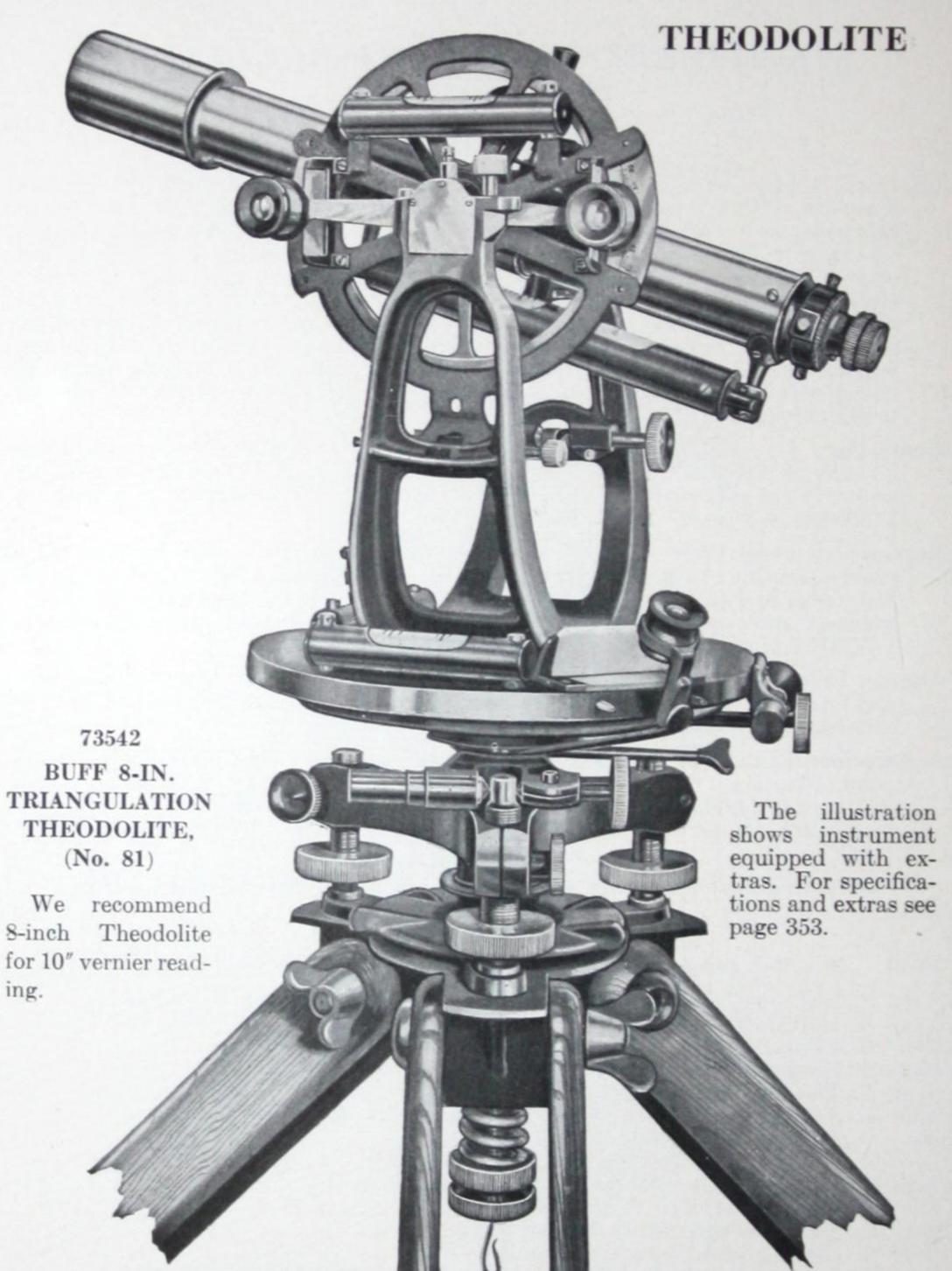
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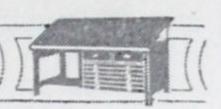


BASE PRICE

73541 (80) Triangulation Theodolite: 6½ inch Horizontal Circle reading to 30"
73542 (81) Triangulation Theodolite: 8-inch Horizontal Circle reading to 30"
73543 (82) Triangulation Theodolite: 8-inch Horizontal Circle reading to 30"
73544 (83) Triangulation Theodolite: 10-inch Horizontal Circle reading to 30"
NOTE—Numbers shown in (—) are manufacturers' numbers

See Price List Inside Back Cover

PAGE 354 Johnson



BUFF ENGINEERS' 18-INCH WYE LEVEL

(Power, 36 Diameters)

SPECIFICATIONS FOR BUFF 18-INCH WYE LEVEL

Telescope: 18 inches long, 1%-inch objective, erecting image, line of collimation correct for all distances. Power 36 diameters. Lenses of purest Jena Glass; free from chromatic or spherical aberration; unusual illumination, exceptionally clear cut and sharp definition of image over entire field. Protection to object slide. Entire telescope and level tube are finished black. Unless otherwise ordered the sensitiveness of spirit level will be 20 seconds to one division 1/10 inch. Instrument adjusted to the finest possible accuracy with sunshade in position and focussed on mean distance.

General: Phosphor-bronze contact points for the bell-metal telescope collars. Bell-metal center in socket of phosphor-bronze. (Note—For the more precise users where a specially sensitive spirit level is specified the hardened steel and annealed iron center is recommended theoretically as well as practically, and gives the ideal bearing.) Four levelling screws of hard bronze. Complete in mahogany case with strap and hooks, sunshade, wrench, screw driver, adjusting pin, etc. Weight of complete instrument 10¾ lbs. Tripod, 8 lbs.

The best metals for surveying instruments are those which have coefficients of expansion equal to that of glass. This is important in order to retain the adjustments despite temperature changes.

Co-efficient of glass per foot, for 1° Fah	.00005 inch
Co-efficient of steel per foot, for 1° Fah	.00007 inch
Co-efficient of brass per foot, for 1° Fah	.00012 inch
Co-efficient of aluminum	.00014 inch

Buff Levels have the very finest Centers possible. Put together with intelligence and knowledge covering many years. The accuracy of work in the field is unfailingly accurate.

Note—For the most precise uses, where a specially sensitive spirit level is specified, the steel and iron center is strongly recommended as securing the most nearly perfect center theoretically as well as practically, and giving the ideal bearing.

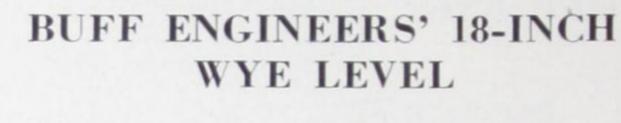
Dust Caps for levelling screws are a real necessity. Buff supplies them on all instruments.

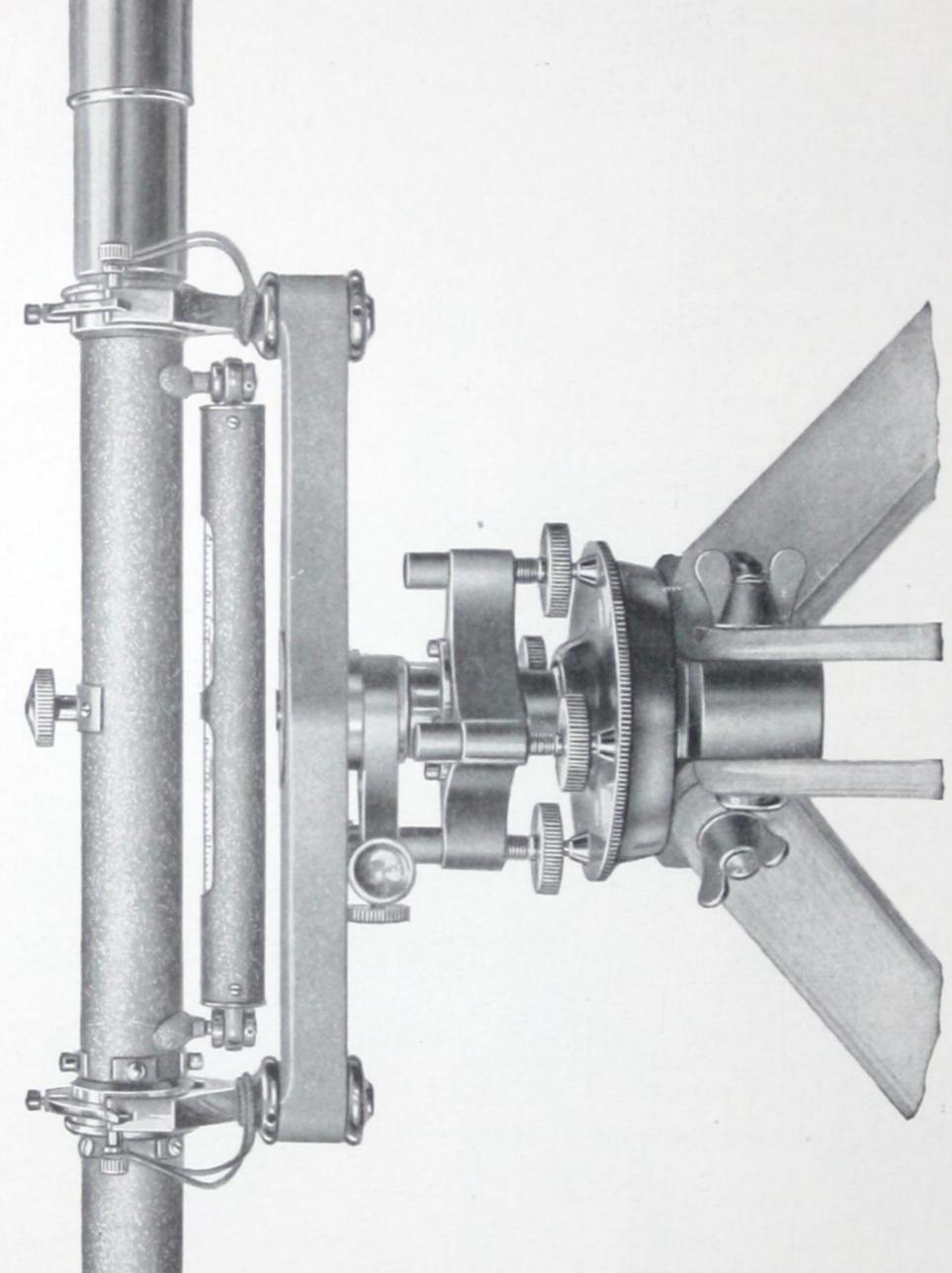
73551	EXTRAS	PRICE
Item 1	Hardened steel center in phosphor-bronze socket	
Item 2	Hardened steel center in annealed iron	
Item 3	Fixed stadia wires	
Item 4	Extra sunshade having aperture for use when the light is too bright for accurate work	
Item 5	Metal mirror, to read bubble without moving from eye-piece, silver- plated arms and jointed	
Item 6	Waterproof bag of silk to protect the level from rain	
Item 7	Bottle of superfine watch oil to lubricate the centers	
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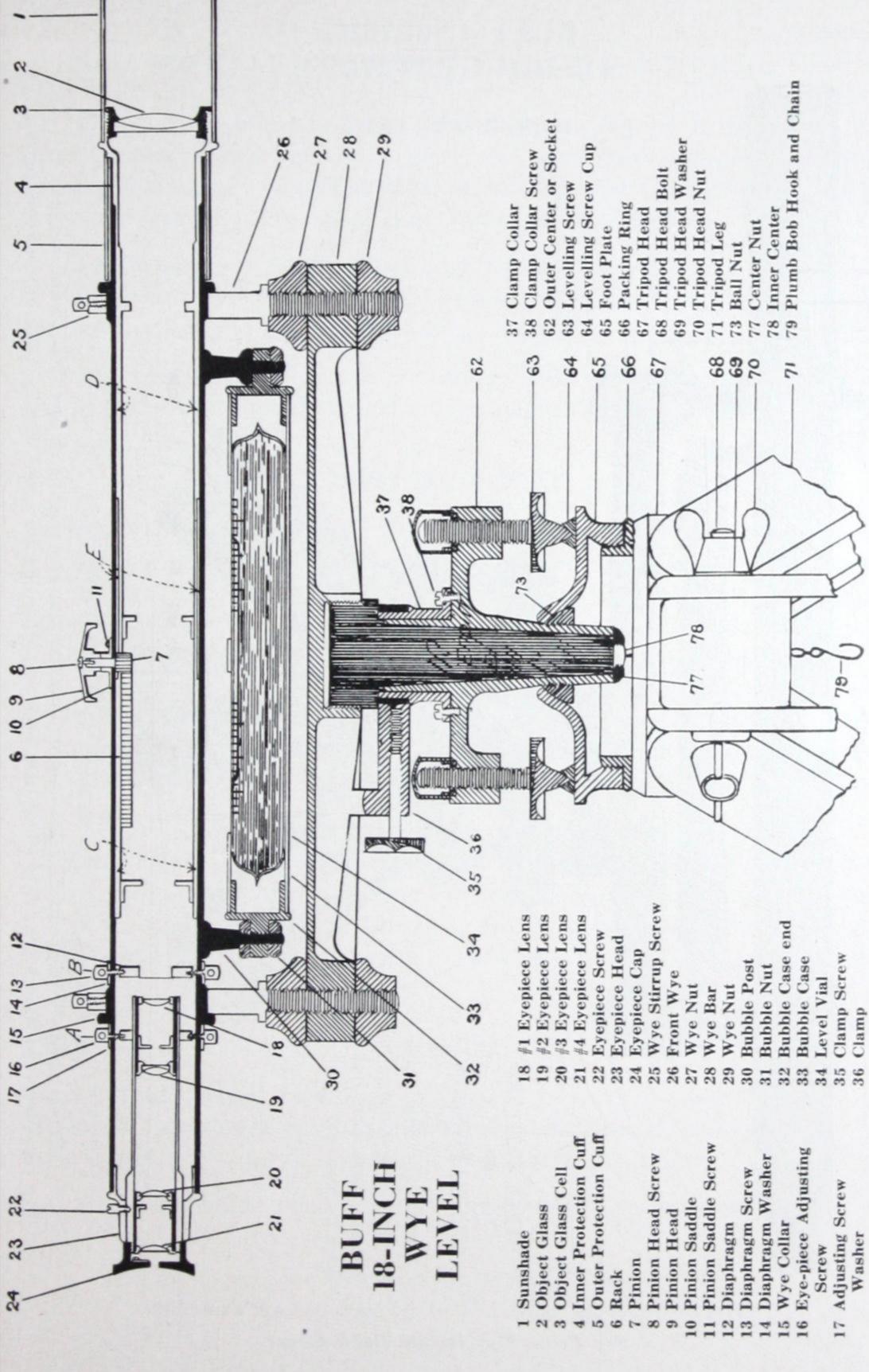
Internal Focusing Telescope is optional. Can be supplied with 20-inch or 22-inch Telescope, Extra. 73561 Power, with erecting eye-piece, 36 diameters.

Specifications see Page 355

See Price List Inside Back Cover

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BUFF (No. 18H) HYDROGRAPHERS

18-INCH WYE LEVEL Giving the ideal nonbearing, costs more but is friction, non-expansion ANNEALED IRON STEEL CENTERS more permanent.

73581 Weight, 12 lbs.

The three levelling screws provide a wider base with smoother operation and thereby holds adjustments better Recommended equipped with mirror for making simultaneous reading on fevelling rod and bubble.

NOTE—Numbers shown in (—) are manufacturer's numbers See Price List Inside Back Cover

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BUFF ENGINEERS' DUMPY LEVEL

Equally accurate work can be done with a dumpy level of our improved make as with the regular Wye level, since the same sensitiveness of level bubble is put into this instrument and the same objective of the same focus and diameter, giving the same power of 32 diameters.

Particularly on work of a roughing-out nature, where liability to slight knocks is present that would seriously injure a Wye level, the possibilities of a compact dumpy level are at its best.

An engineer certainly can perform as close work with this level—and yet feel sure that his adjustments once made will keep so indefinitely.

SPECIFICATIONS

Telescope: 18 inches long, 1%-inch objective, erecting image, line of collimation correct for all distances. Power 32 diameters. Lenses of finest Jena glass; free from chromatic or spherical aberration; unusual illumination, exceptionally clear cut and sharp definition of image over entire field. Protection to object slide. Entire instrument is black finished above the levelling screws, including telescope and level. Unless otherwise ordered the sensitiveness of spirit level will be 25 seconds to one division 1/10 inch. Instrument adjusted to the finest possible accuracy with sunshade in position and focussed on mean distance.

General: Bell metal center in socket of phosphor-bronze clamp and tangent screw; four levelling screws. Complete in mahogany case with strap and hooks, sunshade, screw driver, adjusting pin, etc. Weight of complete instrument is 9½ lbs. Weight of tripod split legs, 8 lbs.

73591

EXTRAS

PRICE

- Item 1 Stadia wires, fixed......
- Item 2 Waterproof cover, for protection against rain and the weather
- Item 3 Bottle of superfine watch oil to lubricate the center.....

Instrument is provided with clamp and tangent screw.

See Price List Inside Back Cover



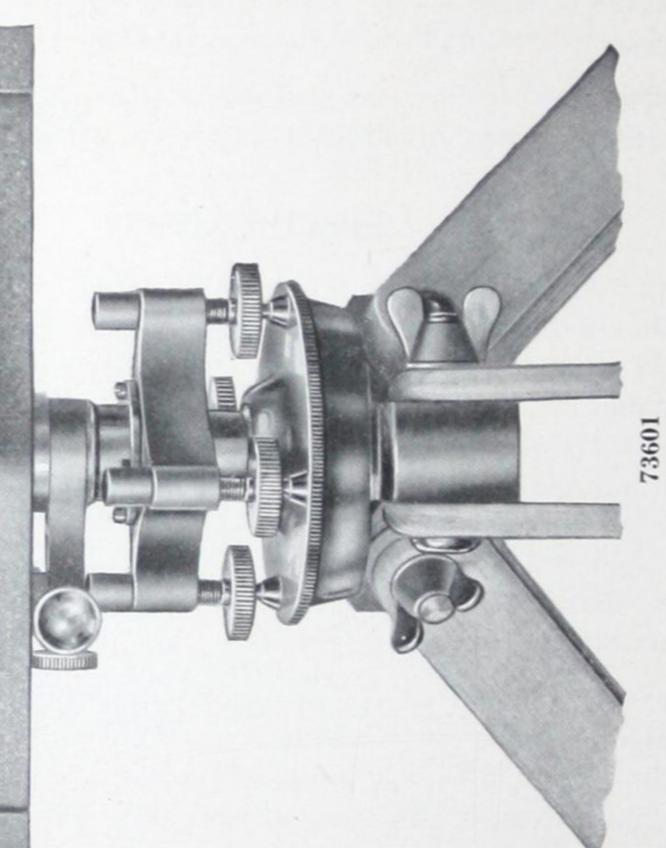


BUFF (No. 19) 18-INCH DUMPY LEVEL

Weight, 10 lbs.

The Staunch Bar and its Two Standards are fitted to within 1/10000 of an inch.

Extreme Accuracy



ENGINEER'S 18-IN. DUMPY LEVEL, (MODEL 19)

Power of Telescope—32 Magnification

Dense hardest Bronze. Perfectly balanced Telescope. Light increased 10% with New German Optical Glass. Larger telescope slide—greater durability.

Will hold its perfect adjustment of crosswires through winter and summer.

NOTE—Numbers shown in (—) are manufacturer's numbers

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73612

B. K. ELLIOTT COMPANY





EACH Split-Leg Tripod..... 73611 Extension Tripod.....

Split-leg tripods for our regular instruments, as recently designed, are of one piece, fine-grained white ash. The advantages of white ash are the straighter and closer grain and the better and more durable finish permissible.

The iron shoe provided on our regular tripods is of improved and superior design for field work.

The bell-metal head holding the three legs together at the top, is a single casting strengthened by curved and powerful ribs adding grace and increasing the rigidity.

The finish is of the most approved type, being three coats of hard shellac and waterproof varnish, which are each rubbed down and dressed in oil, thus procuring an almost indestructible, permanent finish.

Buff levels and transits all fit the Buff Tripod Thread, 31/2" x 12, giving four full turns, so instrument will not easily unscrew and fall off.

Transits and Levels repaired on short notice at lowest prices

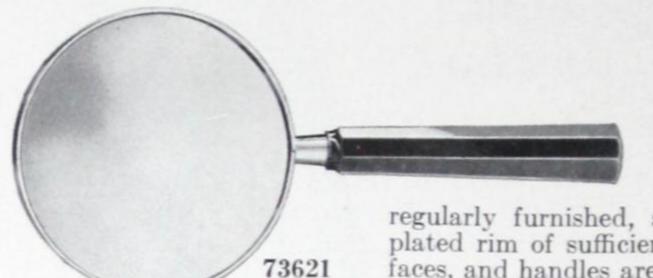
See Price List Inside Back Cover

mones Page 361 Johnson





READING GLASSES



These round readers are unsurpassed for optical properties, design and workmanship. The lenses are accurately ground of clear white ophthalmic glass. They are highly polished and cover a wide field. They are

regularly furnished, as listed below, with chromium plated rim of sufficient width to protect the lens surfaces, and handles are of tapered, black plastic.

DIAMETER SIZES 73621.

21/2" 31/4" 4"

73631

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73635

SEMI-ACHROMATIC READING GLASS

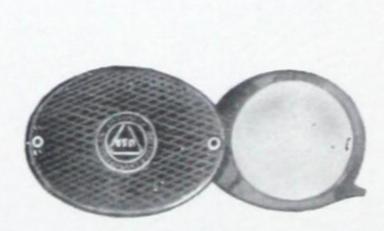
This highly corrected reader has two plano-convex lenses instead of a single double convex lens. This construction eliminates chromatic and spherical aberration to a substantial degree. Furnished with chromium plated rim and ferrule with tapered, black plastic handle.

REDUCING GLASSES

Reducing Glasses are the same as Readers in construction, but are fitted with double concave lenses instead of double convex. Used by Artists and Engravers to reduce drawings, photographs, etc.

73623 Reducing Glass, 3 inch diameter..... Each

POCKET MAGNIFYING GLASSES



73624



73625

These small pocket magnifiers are made with single or double lenses in vulcanite mountings. All are extremely durable, light in weight and neat in appearance. The double lens style gives a choice of three magnifications.

73624 Single Lens	1"	11/4"	1½"
Magnification	4x	3½x	3x
73625 Double Lens 3/4"	1"	11/4"	1½"
Magnification)x 4x8x	3½x7x	3x6x

See Price List Inside Back Cover

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CODDINGTON MAGNIFIERS

Give a good definition and a wide field. They are made of a single lens of cylindrical shape with a deep groove cut in the center and blackened to act as a diaphragm. The ends of the cylindrical shaped glass are ground and polished to form lens surfaces.



73632

SELF-ILLUMINATED MAGNIFIERS



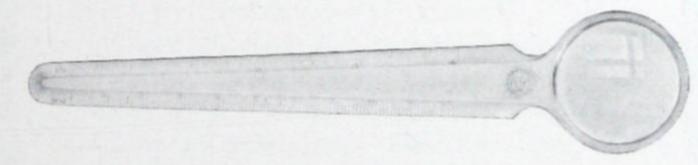
Affords a wide field of view, having a "Doublet" lens two inches in diameter, 4-Power, nicely corrected for aberration or distortion.

Designed for reading maps, blueprints, nautical charts, or checking metals, castings or small machine parts.

Елсн

73635 Illuminated Magnifier complete with battery and bulb.....

POCKET MAGNARULES

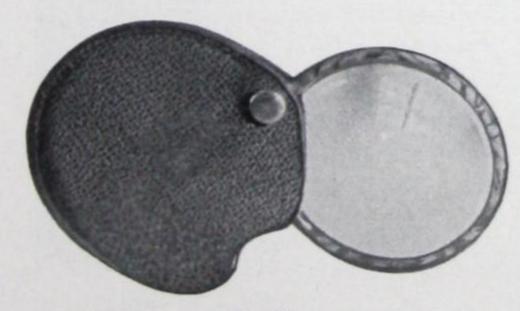


The Magnarule is a combination pocket rule and magnifier. The lens is mounted in a tapered crystal zylonite handle, one edge having a four-inch scale to 32nds, the other edge metric. The lens is 1¼ inch diameter, approximately 3-power and is optically correct.

EACH

73636 Magnarule 11/4 inch...

POCKET MAGNIFIER WITH ATTACHED CASE



The magnifying lens, two inches in diameter, with five-inch focus is made of clear opthalmic glass and is attached to a durable, soft leather case into which it swings, affording the lens adequate protection at all times.

73637 Magnifier in Case EACH

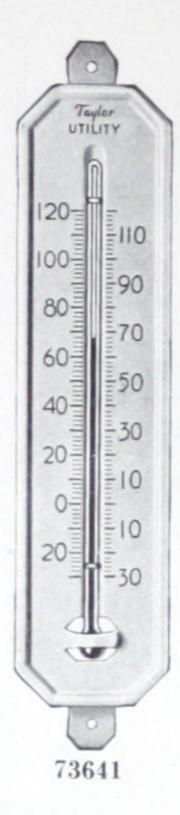
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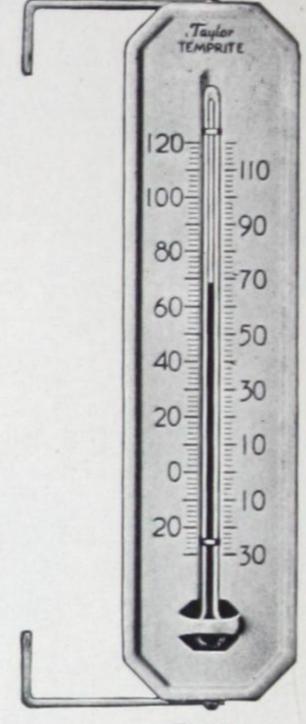
THERMOMETERS

73641 Utility Wall Thermometer.
Permacolor tube, magnifying lens,
outdoor temperature range. Scale
8½ x 2", white vitreous enameled.
Black figures and graduations
fired in for permanence.

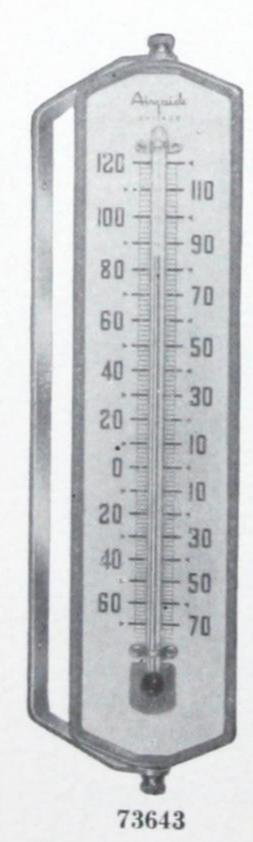
EACH.....

73642 Temprite Window Thermometer. Permacolor tube, magnifying lens. Scale 8½" x 2", white vitreous enameled, octagonal design. Black figures and graduations fired in for permanence.

Еасн.....



73642

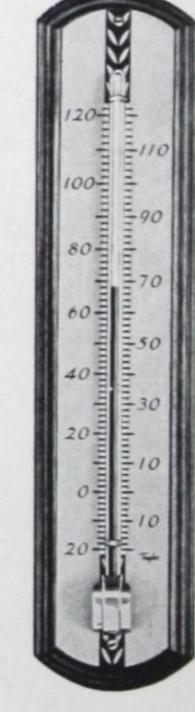


73643 Window Thermometer, the most popular of this type. 10" Vitreous enamel scale, finished ivory with large scale black markings and numerals. Adjustable brassplated brackets. Overall size 1114" high, 21/2" wide.

Еасн

73644 Indoor Wall Thermometer.
Permacolor tube with magnifying lens. Satin finished brass scale with black figures and graduations. Finished in walnut, ivory or natural. 6" long.

EACH.....



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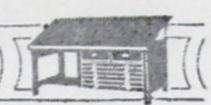
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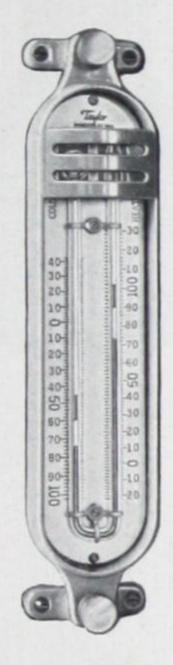
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MAGE 364 Junior



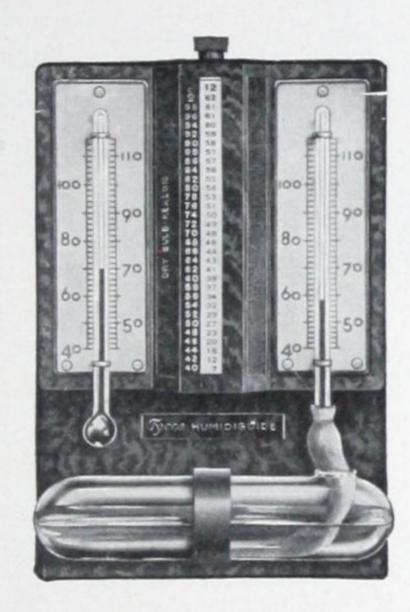


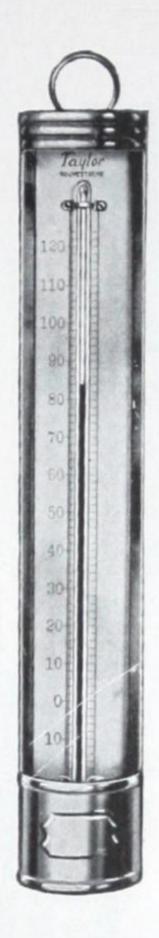
THERMOMETERS-HYGROMETERS



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EACH

Asphalt Testing Thermometer. 11½ inches long, bullet-shaped end, armored steel chromeplated case. Ranges 200° F. and 200° to 600° F.

EACH

EACH

Mason's Form Hygrometer for determining the relative and absolute humidity and dew point and for foretelling frosts. Complete with U. S. Weather Bureau tables and directions for determining humidity. Thermometer with indoor temperature range. Permacolor tubes with magnifying lens. Scales have burnished metal figures and graduations on a polished lacquer background. Mahogany finished bakelite. Complete with spare wicks and instructions.

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THERMOMETERS



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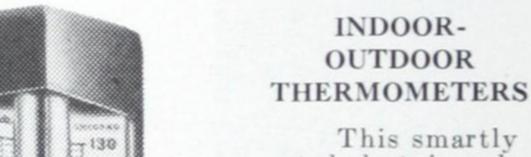
73661 An attractive wall thermometer with humidity guide in a modern case of black bakelite and chromium. Silver finish dial and scale. 73/4" high, 23/4" wide, and 11/8" deep......

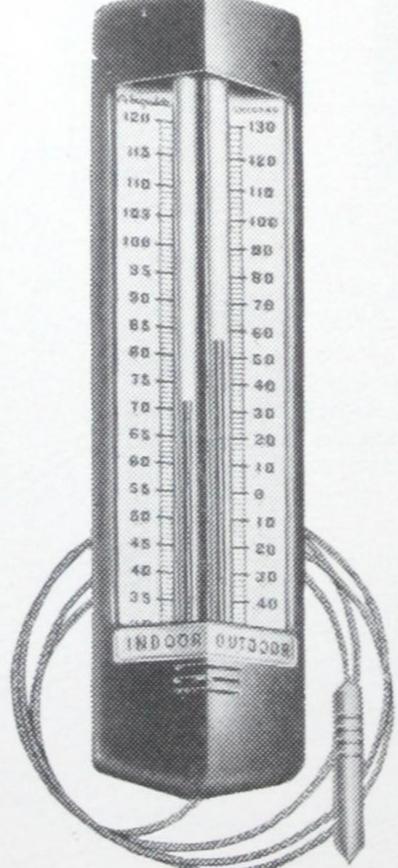
EACH CACH

73662 A handsome wall barometer of solid walnut. Dial and thermometer scale of rich, etched metal. Finest quality movement with altitude adjustment. Size 5" wide,

11" high, 17 deep.

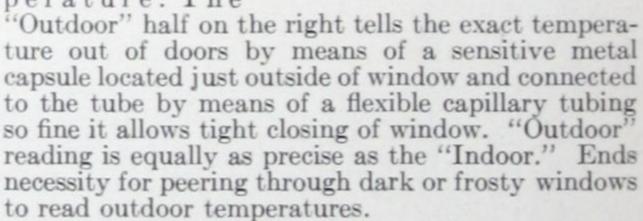
73662





73663

This smartly styled twin-scale thermometer serves a double capacity. Located indoors it tells at a glance both indoor and outdoor tempera-The "Intures. door" half on the left is a regular bulb thermometer accurately calibrated and tested to register indoor temperature. The



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MAGE 366 Junior

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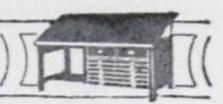
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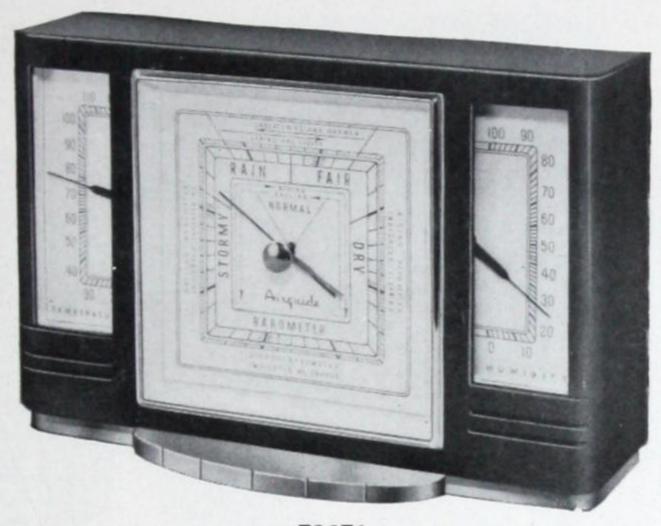
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THERMOMETERS—BAROMETERS



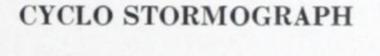
73671

A Combination Instrument for office or home. The center dial forecasts the weather . . . the matching side dials indicate temperature and relative humidity. The barometer is an American-made movement of excellent quality. Numerals and calibrations are black on a satin silver background.

EACH

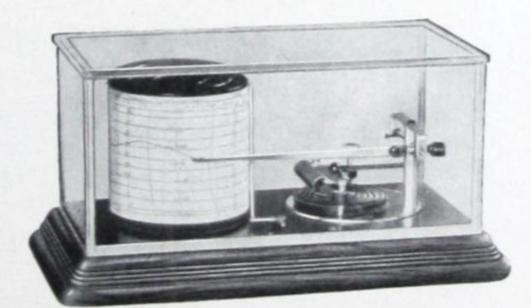
"Argyle" Combination Instrument, $5\frac{3}{4}$ " high, $9\frac{1}{2}$ " wide, $2\frac{3}{8}$ " deep. Black 73671 bakelite with chrome base and bezel...

RECORDING THERMOMETER





73672



73673

Recording Thermometer. Temperature range 0° to 100° F. Gives a con-73672 tinuous seven-day chart record of temperature, divided into days and two-hour divisions. Gray enameled metal case, with supply of charts for one year.....

EACH

EACH

Recording Barometer. Records barometric pressure on a continuous 73673 weekly chart. Unit diaphragm movement compensated for temperature. For altitudes 0 to 3500 ft. Glass-covered case, 12" long, 7" high, 8" deep.

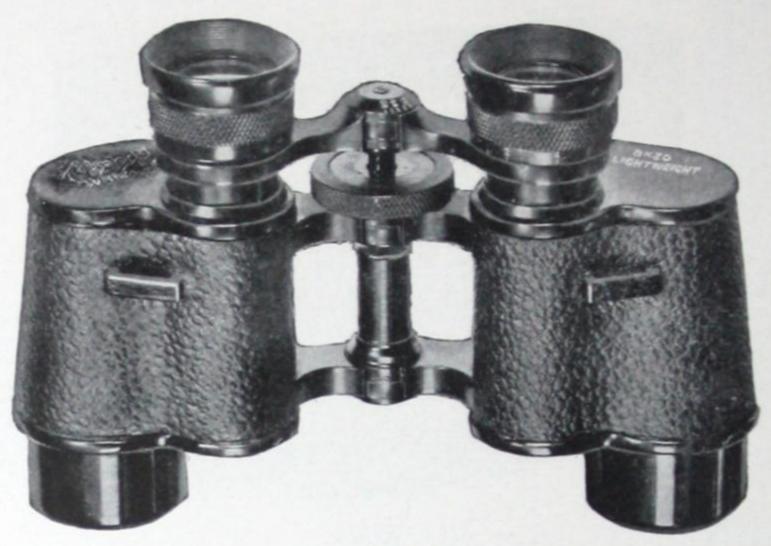
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ELLIOTT'S BINOCULARS



"SCHENLEY"

SCHENLET	73681 "PITTSBURGHER"	73682 "Schenley"
Power	8 x 26	8 x 30
Weight		14 oz.
FACH		

Price includes leather case with shoulder and neck straps

BAUSCH AND LOMB BINOCULARS

	7 × 35	7 x 50
oz.		OZ.
$19\frac{1}{2}$	191/2	42
		$19\frac{1}{2}$ $19\frac{1}{2}$

Number 73686 73687

Power 8 x 30 9 x 35

Weight 22 oz. 26 oz.



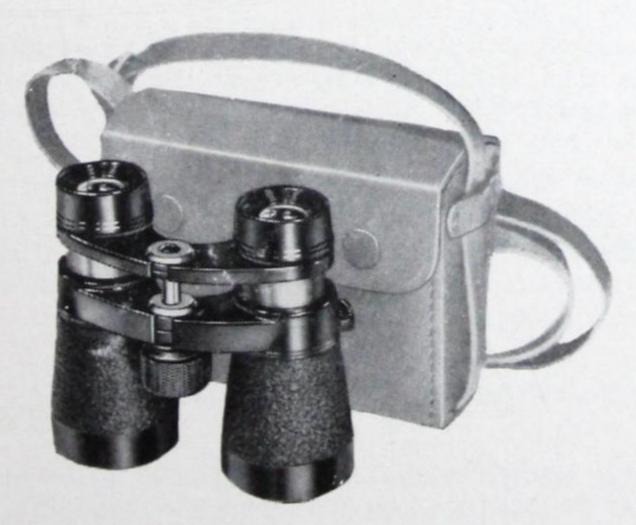
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FIELD GLASSES





SCIENTIFIC BOOKS

ARCHITECTURAL-STRUCTURAL

73701	KIDDER-PARKER. Architects' and Builders' Handbook. 2315 pages, 41/2 x
	71/4 inches. Flexible Binding. Profusely illustrated. A handbook for
	Architects, Builders, Structural Engineers, Contractors and Draftsmen; valuable as a reference book for everything relating to the construction
	and equipment of buildings. By the late F. E. Kidder, C.E., Ph.D., rewritten by Harry Parker, M.S., and a staff of specialists

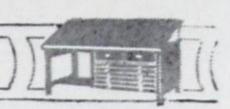
This architectural "best seller" gives an easily and quickly found answer to the questions raised in solving the architect's daily problems. The data, standards and information are shown graphically, so that pictures tell the story. Bare facts, standards, methods without excess of detail or ornament, graphically give the information desired. It enables the draftsman, architect, engineer, etc., to save time and effort.

The important terms and basic principles employed in the design of structural members in building construction, and a host of examples with their solutions illustrating just the sort of problems that must be faced in practice.

An excellent textbook for classroom use; also designed to meet a demand from architects, builders, and homemakers for definite and elementary information upon building construction details.

- 73707 Ketchum. Design of Highway Bridges of Steel, Timber and Concrete. 566 pages, 6 x 9 inches, 340 illustrations, 7 folding plates, 140 tables...... Each

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ARCHITECTURAL-STRUCTURAL

(Continued)

This book covers the design of head frames, coal tipples, coal washers, coal breakers, concentrators, mine buildings, bins, retaining walls, trestles, and other mine structures made of steel, timber, and reinforced concrete.

- 73713 Ketchum. Stresses in Framed Structures. A Reprint of Part I of Design of Steel Mill Buildings. 217 pages, 6 x 9 inches, 103 illustrations..... Each

Presents the basic principles of structural drafting, with particular emphasis on those phases of the subject which differ from engineering drawing. When the fundamentals have been established, further chapters discuss their application to drawings of some of the more common types of members, and the concluding chapters complete the picture of the scope of the draftsman's work.

This book is planned for basic courses in the design of steel structures. The fundamental principles of design are first applied to detached individual members. Later these fundamentals are applied to the design of more complete structures, with due regard to the interdependence of the different members and to the design of the details.

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(Continued)

- Taylor-Thompson-Smulski. Concrete Plain and Reinforced. Known for many decades as the standard in its field, this famous work presents a comprehensive treatment of the many phases of the subject. In Two Volumes:
- 73722 Vol. II. Theory and Design of Continuous Beams, Frames, Building Frames and Arches. 688 pp., 6 x 91/4 in., 224 figures, 31 diagrams. Cloth....Each

A comprehensive treatment of the general theory pertaining to structural members, also their detailed design and the design of their connections with other members. Covers the design of steel and cast-iron members, splices and connections for steel members, design of wooden members and splices and connections, and design of reinforced concrete members, in a practical treatment including a number of worked-out illustrative problems.

Covers fully the engineering of foundations of all types, footings and piers, land and underwater, describing each type of structure, its suitability for various purposes, factors of design, design methods, construction pointers, and other facts to aid the engineer and construction man in their work in this field. Made complete with sections on investigation of the soil and excavation, and even a chapter to help the engineer avoid legal pitfalls.

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SCIENTIFIC BOOKS

ARCHITECTURAL—STRUCTURAL

(Continued)

HOOL AND PULVER. Reinforced Concrete Construction.

Presents detailed principles, data, tests, and construction facts relating to the materials of reinforced concrete construction, and explains, with many examples, the design of all the simpler elements. A concise and authoritative treatment of the essentials, adapted for class or home study purposes.

73731 Vol. I. Fundamental Principles
73732 Vol. II. Retaining Walls and Buildings
73733 Vol. III. Bridges and Culverts
73734 Merriman-Hankin. Strength of Materials. The entire book has been revised in the light of today's needs, and changes in content and arrangement have been made wherever necessary. Enough problems are included to give concrete application to the theory discussed. 148 pages, 71 illustrations, 53/8 x 83/4 inches. Cloth
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The standard railroad field book. Widely used in colleges and among engineers; distinctive for: the fullness and completeness of the tables; the mathematical clearness and up-to-dateness of the text; the excellence of typography and other details of manufacture.

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In Two Volumes.

Gives the fundamentals of surveying for students beginning the study of this subject. Includes all the essentials necessary for a comprehensive knowledge of practical surveying.

For many years a standard work in its field, this book contains a systematically arranged discussion of the details of planning railways, including such subjects as: reconnaissance, preliminary surveys, location, transition-curves, turnouts, frogs, switches, and actual construction.

73747 Hodgman, F. Manual of Land Surveying. One of the best and most practical books on the subject of land surveying. Leather, with flap. . Each

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CIVIL ENGINEERING (Continued)

- MERRIMAN-WIGGIN. American Civil Engineers' Handbook. 2263 pages, 4½ x 7 inches. Illustrated.

The most complete and authoritative handbook of civil engineering, Merriman has attained its high position through more than two decades of continuous and reliable service. The revised fifth edition was prepared under the editorship of Thaddeus Merriman, son of the original editor, and Thomas H. Wiggin, well-known consulting engineer assisted by an exceptionally able group of contributors—all eminent engineers.

An excellent seller for many decades and still a useful collection of the tables essential to the locating engineer. Designed to save time and reduce error in mathematical field calculation, it includes tables of actual tangents, formulas applicable to railroad curves and the location of frogs, natural functions of angles, etc.

A standard text and field manual on the principles and practice of surveying. Describes clearly and thoroughly, use of instruments, methods of making surveys, and the keeping of accurate and serviceable field notes.

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Searles-Ives. Field Engineering. A handbook of the theory and practice of railway surveying, location and construction.

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- 73762 Vol. II. Tables. 403 pages, 4 х 6¾ inches. Flexible binding..... Еасн

A textbook and pocket manual combined, treating with great thoroughness fundamental principles and methods.

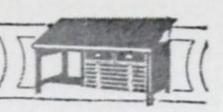
Formerly The Civil Engineers' Pocketbook. Mathematics, Mechanics, Strength of Materials, Hydrostatics, Hydraulics, Bridge and Roof Trusses, Railroads, Concrete (Plain and Reinforced), Conversion Tables of Units of Weight, Measure, etc.

A handbook in civil engineering that in point of view, comprehensiveness, organization and format should be especially valuable to both engineers in practice and students. Provides an unusually thorough treatment of the fundamental divisions of civil engineering.

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HARGER AND BO	NNEY. Handboo	ok for Highwa	y Engineers.
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73771	One-volume Edition	Fion

73772 Vo	1 I-Principles and	Practice	FACH

70770 W 1 TT T' 11 100	n .	**
73773 Vol. II—Field and Office	Data	EACH

For highway engineers, highway inspectors and highway contractors. It covers throughly all the necessary reference data on rural highway design and construction, including general economics, location, grading, drainage and small span bridges, pavements and railroad grade crossing protection and eliminations. 1720 pages, $5\frac{1}{2}$ x 7 inches, flexible binding, illustrated.

Hewes. American Highway Practice. An indispensable reference work for the highway engineer, the asphalt and cement technologist, the landscape engineer or architect, and the advanced student of civil or highway engineering.

In Two Volumes:

A compact presentation of the problems of highway location, with special emphasis on curves and earthwork, including the banking and widening of pavements. The economic and aesthetic advantages of easement spirals are fully treated, and a variety of original tables is given to facilitate the layout of these curves.

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This book presents in an exceptionally clear and able manner the theory and practice of highway curves as followed in this country.

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A single-volume treatment written out of the authors' famous three-volume treatise, American Sewerage Practice. It presents that information which the authors consider it desirable for the student to acquire before taking up work in this field. It should be of particular service because it is based on actual practice—on the past experiences and current opinions of many practicing engineers.

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MECHANICAL ENGINEERING

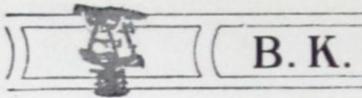
A standard manual of data, methods and definitions for apprentices, machinists, toolmakers, draftsmen, designers, foremen, superintendents, and all others connected with shop and drafting room practice in the metal-working and allied industries.

Embodies information pertaining to the fundamental theory underlying engineering practice. It is essentially a treatment of the principles of mathematics, applied physics and chemistry, supplemented with mathematical and physical tables and a basic discussion of contractual relations. Offers a book of great usefulness to engineers of every type.

This book contains a wealth of practical data of value to the shop man as well as the designer and draftsman. It gives the methods, data and basic facts which are of constant application in machine design but which have never before been collected into a single volume.

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A reference book on Machine Design and Shop practice for the mechanical engineer, draftsman, tool maker and machinist. Includes recent or revised engineering standards, together with a large amount of general information and mechanical data representing the latest designing and manufacturing practice.

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Kent. Mechanical Engineers' Handbook. Now in two independent, inclusive volumes, divided according to a logical arrangement of subject matter. All formulae, tables, data, and practice described have been compiled from the most reliable sources, thoroughly verified and carefully checked.

In Two Volumes:

- 73803 Power. 1252 pages. Illustrated. 55% x 85% inches. Flexible binding. Each Deals with the entire field of Power and its applications that are of interest to the mechanical engineer.

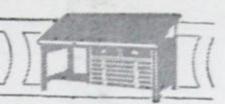
Covers in detail present-day methods in Design and Shop Practice.

A comprehensive reference work for mechanical engineers. 15 main sections, each the product of one or more well-known specialist.

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- Pender, Harold. Electrical Engineers' Handbook. Holds a mirror to the entire field of electrical engineering, and reflects it in condensed form, with the authority of an imposing array of specialists. In two volumes:
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This volume has been consolidated into nineteen sections, each dealing with a general topic. Air-Conditioning, Industrial Applications of Motors, and other new topics have been included. Power Transmission and Distribution receives a large amount of space, since it was found that this subject is one which former editions were most frequently consulted.

73812 Electric Communications and Electronics. 1022 pages, 981 illustrations,

Covers the whole field of communication as a unit; it includes telegraphy, telephony, radio broadcasting, etc. First section contains complete mathematical tables, logarithms, trigonometric, exponential and hyperbolic functions, decibels, etc. The section dealing with electron tubes, exhaustive tables are given.

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DRAWING—LETTERING

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The present edition of this preeminently successful text has been designed to keep the book abreast of the latest advances in engineering and pedagogy and to assure the continuance of its role as a vitalizing and progressive influence in technical education.

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This standard high school text presents mechanical drawing as a definite educational subject with the following objectives: To develop the power of visualization; to strengthen the constructive imagination; to train in exactness of thought; to teach how to read and write the language of the industries; to give modern commercial practice in making working drawings.

73816 Reinhardt, C. W. Lettering for Draftsmen, Engineers and Students.

A practical system of freehand lettering for working drawings. Latest edition, revised and enlarged. 73/4 x 11 inches, 36 pages, 54 illustrations, 15 full-page plates..... Each

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SCIENTIFIC BOOKS

MATHEMATICAL TABLES

Containing the Natural Sine, Cosine, Tangent and Cotangent to Seven Decimal Places for Every Ten Seconds of Arc from 0° to 90° Semi-Quadrantly Arranged. Conveniently arranged: the sines and cosines for the first half of the degree are listed on the left hand page and the tangents and cotangents on the right hand page directly opposite, eliminating the possibility of taking a sine for a tangent, or vice versa, while still retaining the advantage of finding corresponding sines and tangents without turning the page.

Consisting of Logarithms of numbers 1 to 108,000, Trigonometrical, Natural and other tables.

Computed to four-place decimals for every single minute of angle up to 100 of distance. For the use of surveyors and engineers.

- Vega, V. Logarithmic Tables of Numbers and Trigonometrical Functions.

 Latest edition, revised and enlarged. 6 x 9 inches, 603 pages. Cloth. Each

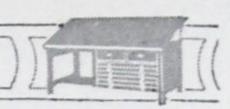
 Contains common logarithms from 1 to 100,000 to seven figures; logarithmic sines and tangents from 0 degrees to 90 degrees by seconds to seven figures; conversion and refraction tables; etc.

73826 IVES. Seven Place Natural Trigonometrical Functions. 222 pages, 4½ x 6

This set of tables together with the appendices contains a great deal of material to which the engineer will want to refer in his daily work.

The content is divided into two parts. In this edition, Part I has been expanded to include an entirely new table on the tangents and cotangents of 0° to 2°0′, to single seconds. In addition, there is a table of sines, cosines, tangents and cotangents. Part II offers a variety of miscellaneous tables, information and examples especially adapted to subdivision work.

See Price List Inside Back Cover

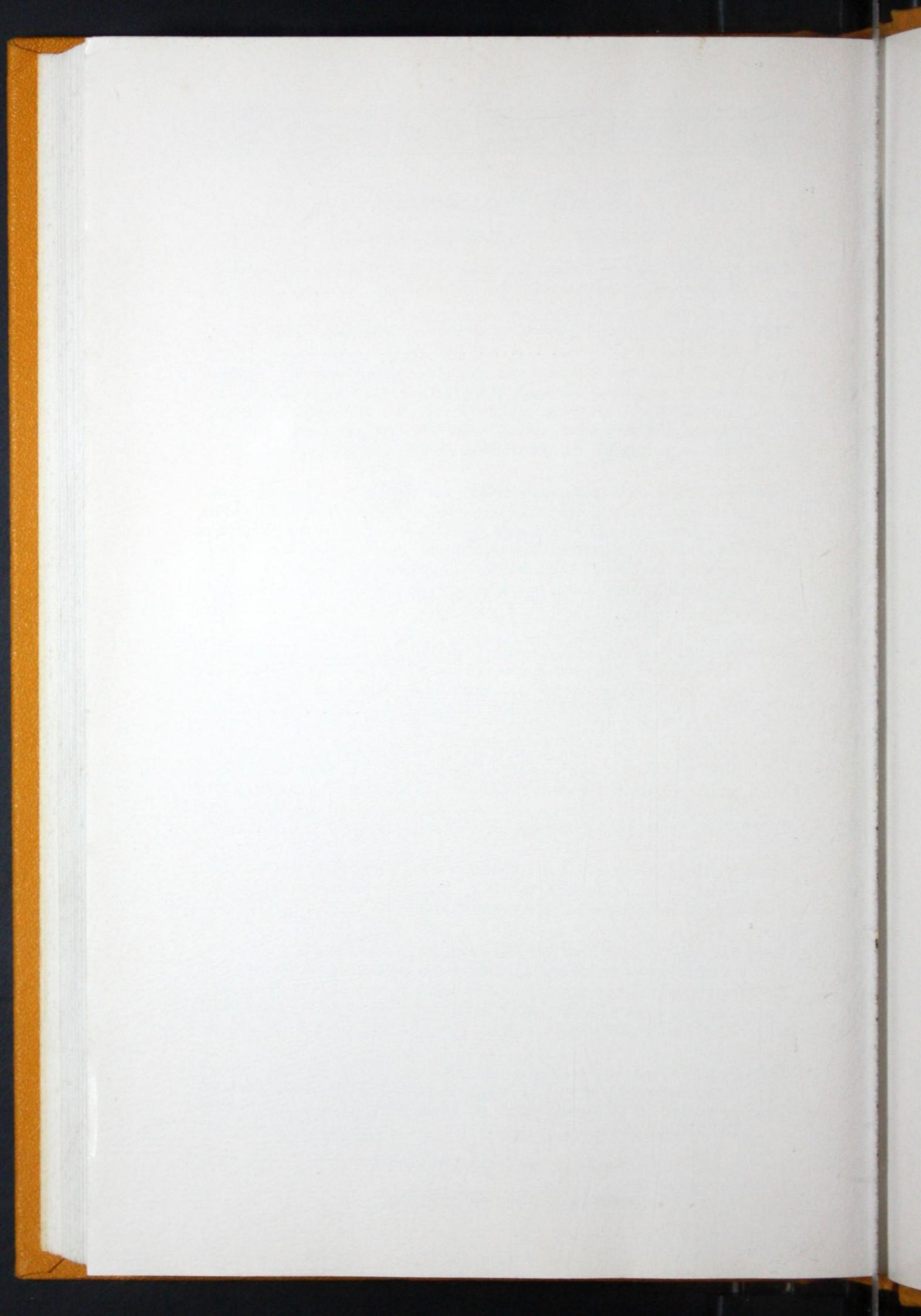


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MATHEMATICAL TABLES (Continued)

Throughout this book emphasis has been placed on physical applications by presenting, with each principal topic, problems relating to the main fields of engineering. Particular care has been taken to present definitions, statements of physical laws, theorems, problems, and the physical units employed, in a thorough and clearcut manner.

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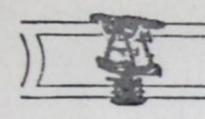


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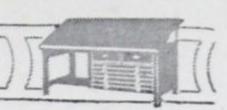
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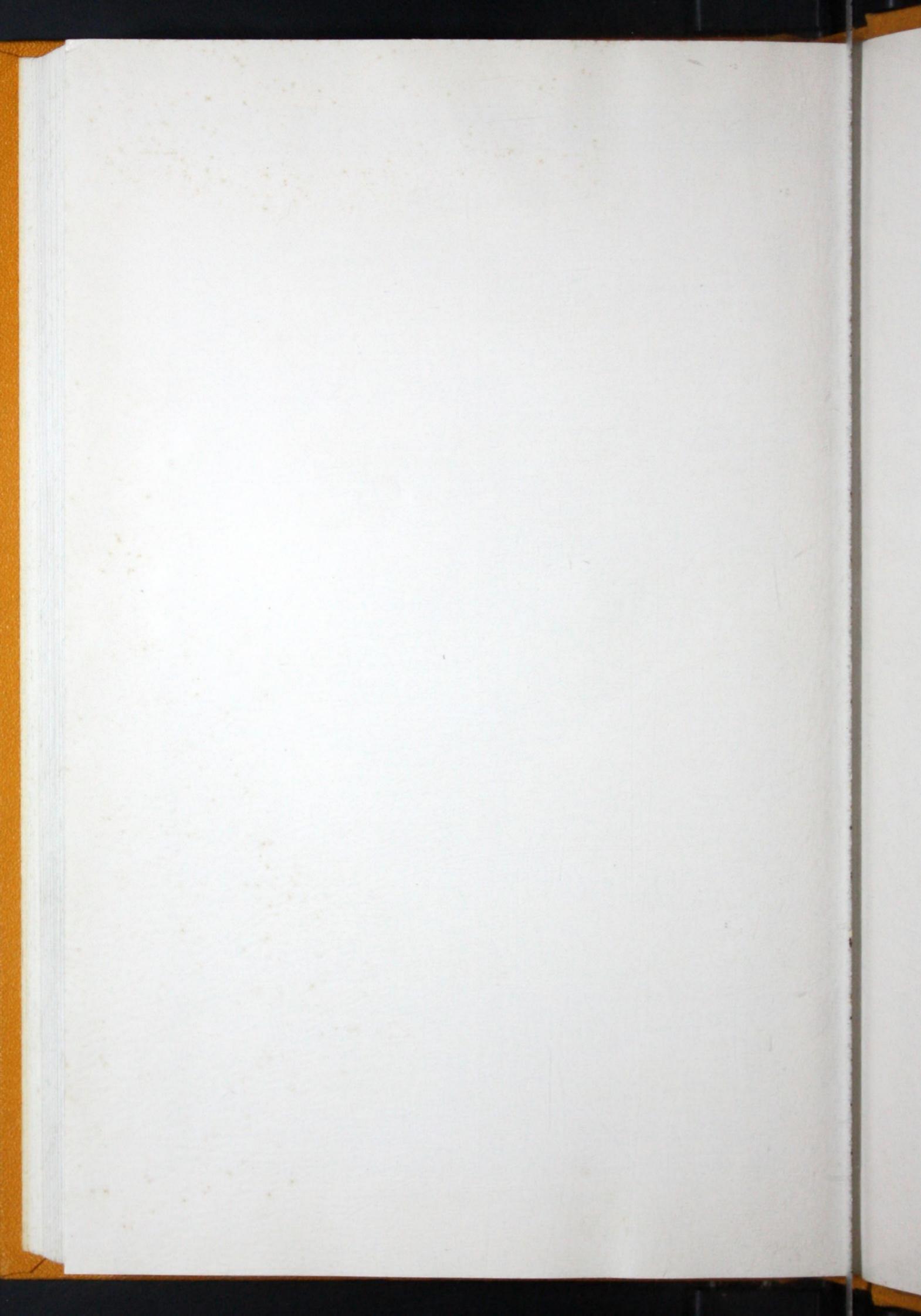
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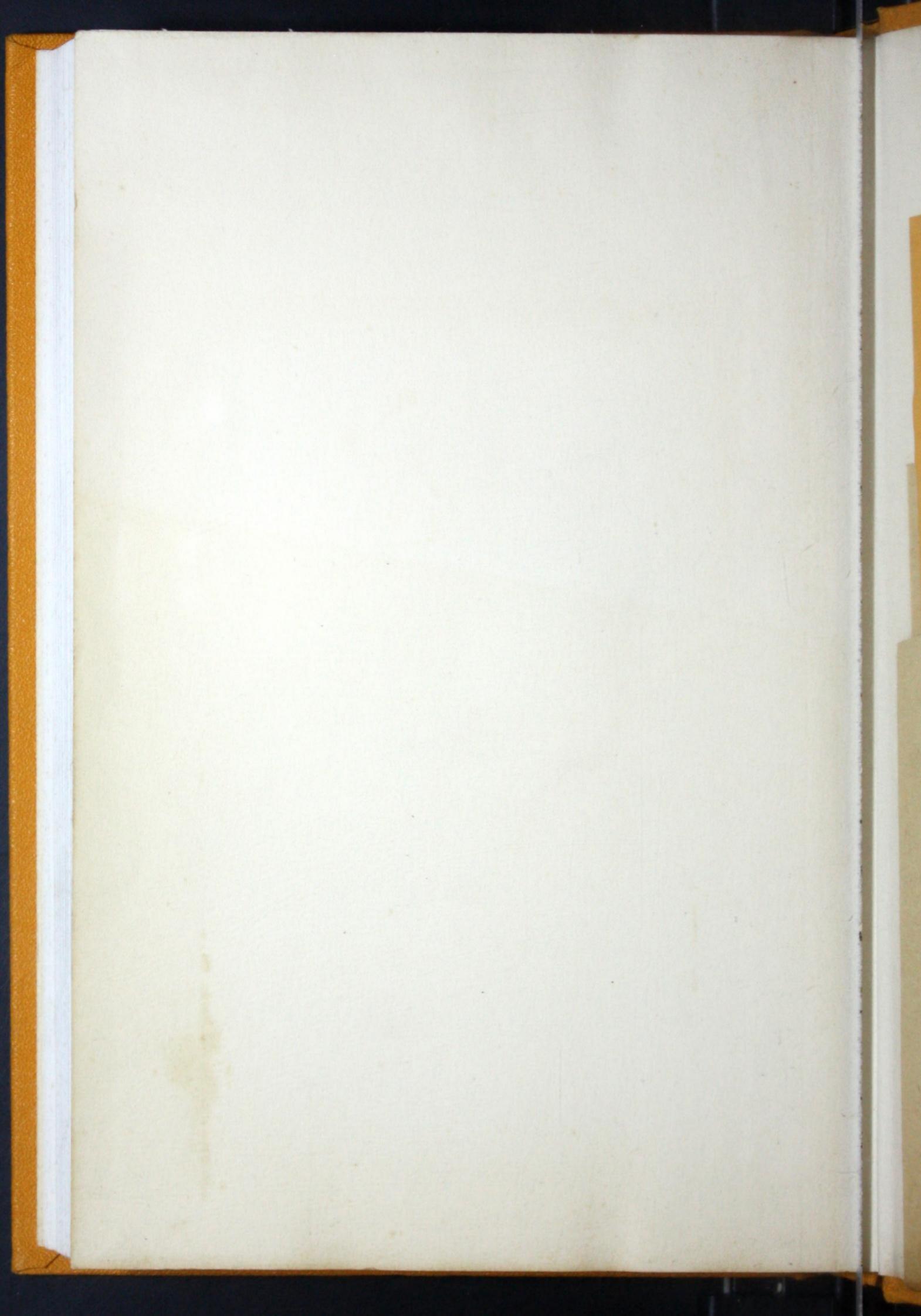
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